DOCUMENT RESUME

ED 153 050 08 CE 015 756

AUTHOR Russell, Earl B.; And Others
TITLE Competency-Based Adult Vocational Education Programs: A National Survey. Research and Development Series No. 131.
INSTITUTION Ohio State Univ., Columbus. National Center for Research in Vocational Education.
SPONS AGENCY Bureau of Occupational and Adult Education (DHEW/OE), Washington, D.C.
BUREAU NO 498AH60237
PUB DATE Jan 78
GRANT G007605788
NOTE 140p.; For related documents see CE 015 755-758
AVAILABLE FROM National Center for Research in Vocational Education Publications, Ohio State University, 1960 Kenny Road, Columbus, Ohio 43210 ($9.00)

EDRS PRICE MF-$0.83 HC-$7.35 Plus Postage.
DESCRIPTORS *Adult Education Programs; *Adult Vocational Education; Advisory Committees; Behavioral Objectives; Business; Criterion Referenced Tests; *Educational Practice; Enrollment; Job Placement; National Surveys; Noncredit Courses; *Performance Based Education; Private Agencies; Private Schools; Program Content; *Program Descriptions; Program Design; Program Length; Proprietary Schools; Public Schools; Sex (Characteristics); Vocational Followup
IDENTIFIERS United States

ABSTRACT

A national survey was conducted to identify the characteristics of specific competency-based adult vocational programs in both the public and private sectors. Through a variety of procedures approximately 1,900 persons were nominated as contacts for program information on all day and/or evening non-credit programs in any type of school or training facility. A questionnaire developed with the services of a national panel of consultants contained nineteen items (descriptors) basic to competency-based instruction, a number of demographic program questions, and six open-ended criterion questions. Questionnaires were sent to 1,657 potential respondents and, after a mail follow-up and a telephone follow-up, 277 usable returns were received. Approximately 72% of the returns were from the public sector and 28% from the private sector (a majority of these from proprietary schools). Several comparisons were made between public and private sectors, and descriptor scores were compared with other variables in the survey. Other analyses included linear regression and canonical correlations to determine the descriptors and criterion questions most closely related to strong programs. One major conclusion was that relatively few high quality programs exist. Complete findings and ten specific recommendations are presented. (JT)

ED153050

Research and Development Series No. 131

COMPETENCY-BASED ADULT VOCATIONAL EDUCATION PROGRAMS: A NATIONAL SURVEY

by

Earl B. Russell
John Boulmetis
Cynthia K. Anderson
Janet Rice

The National Center for Research in Vocational Education
The Ohio State University
1960 Kenny Road
Columbus, Ohio 43210

January 1978

OE 015 756

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Identification and Analysis of Competency-Based
Adult Vocational Education Programs Project

Interim Report

Grant No. G007605788

Project No. 498AH60237

This publication was prepared pursuant to a grant (No. 007-605-788) with the Bureau of Occupational and Adult Education, U.S. Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Office of Education

Bureau of Occupational and Adult Education

ABSTRACT

This detailed report of the national survey of competency-based adult vocational instruction in the public and private sectors is one of four publications from the project, "Identification and Analysis of Competency-Based Adult Vocational Education Programs." The rationale for the survey, methodology, findings, conclusions, and recommendations are presented. Appended materials include detailed reports of 10 site visits to exemplary competency-based adult vocational programs. Data are presented on demographic variables, 19 competency-based course descriptors, and six competency-based criterion questions. Several comparisons are made between the public and private sectors, and descriptor scores are compared to other variables in the survey. Other analyses included linear regression and canonical correlations to determine the descriptors and criterion questions most closely related to strong programs of competency-based adult vocational instruction. A profile of an exemplary competency-based adult vocational program was described. Related project publications include the *National Directory of Selected Competency-Based Adult Vocational Education Programs, Workshop Proceedings,* and a final report.

PREFACE

The application of competency-based education (CBE) concepts to all levels of education and training has grown rapidly. Adult vocational education appears to be particularly suited to CBE because of the highly varied backgrounds, skills, and time requirements of adult learners. Recognizing the importance of the CBE movement, the U.S. Office of Education sponsored the project, "Identification and Analysis of Competency-Based Adult Vocational Education Programs," to determine the status of CBE in adult vocational education. Further, a major project purpose was to provide a vehicle for sharing and exchanging the information about competency-based adult vocational programs.

This interim report contains detailed information about the national survey which was conducted to identify competency-based adult vocational programs. The background of the study, methodology, findings, conclusions, implications and recommendations are the topics covered. Ten site visit reports describing the organization, curriculum, staff training, and strengths and weaknesses of selected exemplary programs identified in the survey are included.

Special appreciation is due to the many individuals conducting competency-based adult vocational education programs who participated in this study, especially those who consented to in-depth interviews regarding their programs during on-site visits by the project staff. Acknowledgments are also in order for the several consultants to the project who are named later in this report. The many individuals and groups representing state divisions of vocational education, local school systems, business and industry training departments, union sponsored training programs, the American Society for Training and Development (ASTD), public postsecondary and proprietary school administrators, and personnel of The Center for Vocational Education who nominated contact persons involved with specific competency-based adult vocational programs are worthy of special acknowledgment. Finally, appreciation is expressed to Dr. Bernardo R. Sandoval, Assistant Director, Manpower Program Development, Los Angeles City Unified School District, and to Dr. Lucille E. Wright, Educational Specialist, College of Education, Cleveland State University, for their critical reviews of this report prior to final revision and typing.

Recognition is given to the project staff for their diligent work in conducting the national survey, analyzing the data, and writing this report: Earl B. Russell, Project Director; John Boulmetis, Graduate Research Associate; Cynthia K. Anderson, Program Assistant; Janet Rice, Research Specialist; and Mary McAnaney and Jane Leemhius, Secretaries. The support of Bruce A. Reinhart, Associate Director, is also acknowledged.

This interim report is one of four publications resulting from the project. The other three publications are:

Identification and Analysis of Competency-Based Adult Vocational Education Programs (Final Report)

The final report contains information about project activities and accomplishments including the literature review, selection of a national panel of consultants, development of the survey instrument, data collection and analysis, planning and operation of the National Workshop, project management activities, and major project findings and conclusions. The final report covers all aspects of the project. Two other products address specific project activities.

Proceedings of the National Workshop on Competency-Based Adult Vocational Instruction, August 2-5, 1977

The workshop proceedings include transcripts of presentations made at the National Workshop held at The Center for Vocational Education in Columbus, Ohio. Seventy-four participants representing public and private adult vocational education attended. Instructors or administrators representing six exemplary competency-based adult vocational programs identified in the national survey gave presentations describing effective programs and discussing implementation, course management, record keeping and other concerns educators have with CBE. Other presentations included U.S. Office of Education activities related to competency-based adult vocational education, The Center for Vocational Education's involvement with CBE and adult vocational education, an overview of the survey reported in this publication, and adult vocational resources available from The Center for Vocational Education.

National Directory of Selected Competency-Based Adult Vocational Education Programs

The *National Directory* provides curriculum specialists and instructors with a reference for sharing and exchanging information about competency-based adult vocational courses and programs. Fifty-seven courses and three programs are described in terms of methods used for identifying tasks in the job analysis, development of performance objectives, delivery of instruction, student testing, course evaluation, and support systems. Names of contact persons with their addresses and telephone numbers are included to facilitate communication and planning of site visits, as well as information regarding course length, number of competencies and objectives, and schedule. The *National Directory* is intended to be a documentary of illustrative exemplary courses and programs, and is an indicator of the potentialities of CBE in adult vocational instruction in the United States.

Robert E. Taylor
Executive Director
The Center for Vocational Education

TABLE OF CONTENTS

	Page
Abstract	iii
Preface	v
List of Tables	ix
List of Figures	xi
Chapter I – Background of the Study	1
The Problem	1
The Rationale	2
The Objectives	2
Literature Review Highlights	2
Chapter II – Methodology	5
Population and Sample	5
Project Consultants	7
Instrument Development	7
Data Collection	8
Data Analysis	10
Chapter III – Findings	13
Descriptive Data	13
Descriptors of Competency-Based Courses	21
Criteria for Competency-Based Adult Vocational Education	22
Comparison of Private and Public Sectors	26
Descriptor Score Comparisons with Other Variables	33
Regression Analysis and Canonical Correlations	38
Chapter IV – Summary, Conclusions, and Recommendations	43
Summary of Findings	43
Conclusions	46
Recommendations	48
Appendices	
A – Initial Letter Sent to the Public Sector Requesting Nominees	51

Page

B — *Centergram* Project Announcement 55

C — Project Announcement Sent to Professional Journals and Newsletters 59

D — Letter Sent to ASTD Membership Sample and the *Fortune* 500 Sample 63

E — Letter Sent to NTATC and MTAB Membership 67

F — Letter Sent to Contacts in the Health Field 71

G — Letter Requesting Local School Nominees 75

H — Letter Sent to School Administrators 79

I — Letter Sent to ASTD Chapter Presidents 83

J — National Panel of Consultants 87

K — Cover Letters for the Data Collection Instrument 91

L — Glossary of Terms 95

M — Data Collection Instrument 99

N — Project Brochure 109

O — Follow-Up Request 113

P — Site Visit Reports 117

References 155

LIST OF TABLES

		Page
1.	Findings of the Telephone Follow-up of Postcard Non-Respondents	9
2.	Findings of the Telephone Follow-up of the Survey Non-Respondents	9
3.	Survey Returns Categorized by Respondent Types	15
4.	Categories of Course Titles Reported	15
5.	Duration of Courses in Hours	16
6.	Frequency Distributions of Months Courses are Offered	17
7.	Competencies (Tasks) and Terminal Performance Objectives Reported for Courses	17
8.	Course Enrollment by Sex of Learners	18
9.	Frequency Distributions of Individual Program Elements	18
10.	Frequency Distributions of Advisory Council Member Types	19
11.	Problems Mentioned in Developing and Operating Competency-Based Courses	21
12.	Suggested Ideas on Competency-Based Course Improvement	22
13.	Percentage of Responses and Means of Ratings of Competency-Based Descriptors	23
14.	Frequency Distributions of Weights Assigned to Competency-Based Criteria	24
15.	Comparison of Respondents' Ratings with Project Staff Weightings	25
16.	Comparison of Private and Public Sectors' Use of Advisory Councils	26
17.	Comparison of Public and Private Sectors in Terms of Advisory Council Representatives	27

Page

18. Comparison of Private and Public Sectors on Placement and Follow-up Programs 28

19. Comparison of Public and Private Sectors Regarding Months of Course Operation 29

20. Comparison of Public and Private Sectors on the Ratings of Descriptors in Section I 30

21. Comparison of Public and Private Sectors on the Weights Assigned to Criteria in Section III 34

22. Comparisons Among Levels of Descriptor Totals and Operation of an Active Advisory Council 35

23. Comparison of Descriptor Total Levels and Advisory Council Member Types 35

24. Comparison of Descriptor Total Levels with Placement and Follow-up Activities 36

25. Comparison of Months During Which Courses Operate and Descriptor Total Scores 37

26. Correlations of Ratings on Descriptors with Assigned Weights on Competency-Based Criteria 39

27. Canonical Correlations and Tests of Significance 40

28. Correlation of Original Variables with Canonical Variable 41

LIST OF FIGURES

		Page
1.	Contacts and Responses from the Private and Public Sectors	14
2.	Types of Facilities in Which Courses Were Offered	20
3.	Distribution of Competency-Based Criteria Total Score	25

CHAPTER I

BACKGROUND OF THE STUDY

Several trends have resulted in an emerging national commitment to adult education. Among these are the lowering birth rate and expanding life expectancy, an expanding technology with an increasing need for retraining to update job skills, and increased emphasis on lifelong career planning and adjustment. A 1977 report of the National Advisory Council on Adult Education concluded that a universal system of education that continues throughout every individual's lifetime is now a national priority.

Various educators have suggested competency-based education (CBE) as a means of offering more relevant and accountable instructional programs to students at all levels and all ages. Competency-based adult vocational education is based upon occupationally valid tasks and consists of elements such as performance objectives, individualized instruction and criterion-referenced testing. In a CBE program, students can become competent at the skills required in an occupation with maximum efficiency of time and effort. Instruction is designed to assist each individual student to develop competencies in identified areas of weakness. Students work at their own rate on the skills or competencies relevant to their individual needs. CBE makes it possible for people to enter and exit the educational system throughout their lifetimes (Pucel & Knaak, 1975).

The Problem

Although competency-based adult vocational education has many advantages, developing and implementing a program requires considerable time and expense. A job/task analysis must be conducted or identified and performance objectives, learning activities, and criterion-referenced tests need to be developed. Implementation and course management require constant surveillance.

A vehicle for sharing and exchanging information about existing competency-based adult vocational programs was recognized as a need to focus on existing successes to be utilized as models. It was conceived that certain information relative to competency-based course development and course management could be generalized across subject areas and would also be helpful to practitioners in both the public and private sectors.

However, relatively little was known about the status of ongoing competency-based adult vocational programs. Large business and industrial firms were thought to be using competency-based training methods to a substantial degree. Through the use of Vocational-Technical Education Consortium of States (V-TECS) catalogs,[1] some adult vocational educators in the public schools are

---

[1] Vocational-Technical Education Consortium of States (V-TECS) catalogs are job-sequenced lists of performance objectives based on tasks performed by workers in specific occupational areas. The occupational areas covered in a V-TECS catalog may include tasks for several closely related job titles. Performance guides for each task explain step-by-step how each task is to be performed on the job. Standards are included that indicate minimum acceptable performance. Criterion-referenced items provide a way to evaluate student accomplishment of a particular task. Teachers can use the catalogs as a guide to what is required for successful performance on the job. Tasks listed in the V-TECS catalogs have been determined through extensive research and review by vocational teachers and workers on the job.

The Consortium is a voluntary organization including 17 member states and two branches of the military. Catalogs for approximately 100 occupational areas have been developed.

implementing competency-based instruction. Documentation of these efforts and information about the status of CBE in adult vocational education was needed before efforts to share and exchange information about successful programs could begin on a significant scale.

The Rationale

Competency-based education can offer some important advantages to adult vocational education students. In a CBE program individual learners progress at their own rate to mastery of the instructional content. Students can learn according to their preferred learning style and build confidence by succeeding. The instructor can spend more time working with individual students and the presentation of the content of instruction is assured to be consistent (Knaak, 1977).

Burger and Lambrecht (1974) stated that in a competency-based program, student progress is monitored closely in relation to the stated objectives, allowing continuous diagnosis of difficulties and opportunity for remedial or alternate methods of instruction. Learners may have different instructional goals depending upon their occupational interests and abilities within the program area. The identified competencies are job relevant because the job analysis has been the source of the task identification.

The Objectives

In an effort to improve the quality of adult vocational education the project, "Identification and Analysis of Competency-Based Adult Vocational Programs," was sponsored to meet the following objectives:

1. Identify and describe characteristics of specific competency-based adult vocational education programs in public and private vocational education.

2. Provide a vehicle for adult vocational program developers and operators to "share and exchange" and "train and be trained" in the competency-based education concept.

3. Provide the profession with information and supporting data on the status of competency-based education in adult vocational education programs sponsored by business, industry, and education so that developers and operators will have a readily available source of assistance.

Literature Review Highlights

A literature review was conducted early in the project to: (a) aid in the identification of competency-based programs in adult vocational instruction in business/industry, labor, education and government agencies; (b) to establish the descriptors for a competency-based course; and (c) to determine the extent of documentation of knowledge in the area.

The most frequently addressed area in the literature involved definitions of CBE or discussion about the characteristics of competency-based programs. Common elements of the various definitions were: individualized instruction based on a task analysis, emphasis on exit requirements, time variable with achievement held constant, performance objectives, criterion-referenced testing, and students held accountable for their progress. Houston (1973) stated:

Competency-based education (CBE) is characterized by its rigorous reliance on objectives which set the parameters for both instruction and evaluation. Such objectives are derived from the role of the practitioner rather than the logical structure of traditional disciplines. Objectives are clearly stated, explicit, defined in terms of what the learner is to demonstrate, and made public. (p. 200)

Spady (1977) defined CBE as:

A data-based, adaptive, performance-oriented set of integrated processes that facilitate, measure, record, and certify within the context of flexible time parameters the demonstration of known, explicitly stated, and agreed upon learning outcomes that reflect successful functioning in life roles. (p. 10)

He distinguished CBE from competency-based teacher education, mastery learning, individualized instruction, and applied performance testing.

Student motivation was often cited as an advantage of CBE. When students understand the concrete objectives established for them to achieve and personally identify with the objectives, they perceive the instruction as being particularly relevant and meaningful. Motivation then becomes a personal matter, and gratification through successful accomplishment permeates the instructional process. Students know the instruction is job relevant when it is based on an analysis of the job. Success experiences, evident at each step in the learning process, are motivators.

CBE is suggested as a means of improving educational programs at a time when program accountability is being stressed. Competency based adult vocational education programs are based on the premise that the instruction will improve/insure job performance. With competencies identified and defined, educators and trainers will be able to demonstrate that learning has occurred.

Adult learners have varying goals, aptitudes, abilities, needs and job or career preferences. The flexibility of CBE allows the educational program to effectively accommodate these differences. In a competency-based course adults may enter at the level appropriate for their abilities and exit when they have attained the necessary competencies for achieving their goals. They may receive credit for the competencies they already possess and begin the educational process at their level of expertise, avoiding duplication of effort. Hertling (1974) stated:

CBE is particularly suited to adult education programs because adults have often acquired a wealth of practical experience which may enable them to demonstrate attainment of specific competencies without taking formal course work. Thus, they would be given credit for competencies which they have already acquired.

Adult students do not have time to learn the "nice to know" areas of vocational instruction. In a CBE program students can master those competencies which lead to attainment of the occupational goal. Because the identification of tasks performed in occupations is the initial step in developing a competency-based vocational curriculum, the competencies learned are job relevant.

The final report, *Identification and Analysis of Competency-Based Adult Vocational Education Programs,* contains a much more extensive review of the literature, including the following six areas:

- The Nature of CBE
- Application of CBE to Adult Vocational Programs

- Developing and Implementing CBE
- Use of CBE in Business, Industry, and Labor Training
- Problems Involved with CBE
- Favorable Aspects of CBE

CHAPTER II

METHODOLOGY

This chapter contains a description of the strategies and procedures used to collect and analyze data gathered through a national survey of agencies dealing with competency-based adult vocational education in both the public and private sectors. Sample selection, consultant inputs, instrument development, data collection, and data analysis procedures are addressed in detail.

Population and Sample

Competency-based adult vocational programs operating in both the public and private sectors in the United States were sought. The only restriction placed on the inclusion of these adult vocational programs was the elimination of degree-granting programs or credit courses of any type, consistent with the meaning traditionally associated with adult vocational education by federal legislation and the U.S. Office of Education. Within this constraint the project staff was interested in identifying adult vocational programs in both the private and public sectors, day and/or evening, in virtually any type of school or training facility.

Initial Contacts

In order to access the public sector, the names of the state directors of adult education, state directors of vocational education, and directors of postsecondary vocational technical schools or community colleges were obtained from the mailing list used by The Center for Vocational Education to distribute its *Centergram* monthly newsletter. This mailing list covers an international audience of approximately 10,000 people. The subgroup of interest in the mailing list totaled 512 individuals.

Additionally, individuals in approximately 75 government agencies were asked to identify programs/courses with which they were associated or acquainted. These contacts and those discussed in the previous paragraph received an initial letter (Appendix A) requesting nominations of personnel associated with competency-based adult vocational programs. To simplify this task a form for names and addresses of contact persons and a self-addressed, stamped envelope were enclosed.

An announcement (Appendix B) was published in the December 1976 issue of the *Centergram,* describing the project and requesting assistance in identifying programs. A similar announcement (Appendix C) was sent to 76 professional journals and newsletters. At least 20 publications responded to the request for assistance in the search. A number of contact people mentioned the announcement in their correspondence.

The private sector was searched extensively. The national headquarters of the American Society for Training and Development (ASTD) was contacted, and a random sample list of 1,000 members was purchased. From this list 500 names were selected after company duplications, geographical overlap, and public sector members were deleted. These people received a letter (Appendix D) with the nominating form (Appendix A).

From the *Fortune* magazine list of 500 leading U.S. businesses and industries in 1976, a sample of 50 companies was selected which were believed most likely to have extensive in-house training programs. The basis for this selection was size, scope, and probable existence of employee training facilities. These companies received the same letter that was sent to the ASTD membership sample (Appendix D).

The 1976-77 directory of the National Association of Trade and Technical Schools (NATTS) was reviewed and a sample of 200 schools was drawn to receive a similar letter. The director of the school was asked if they conducted competency-based adult vocational courses and, if so, if they would be interested in participating in the survey. To expedite this step, a postcard was enclosed on which they could indicate their intent. Also, in this step directors could indicate the number of instructor surveys needed if they wished to participate.

Lists of the members of the National Transportation Apprenticeship Training Council (NTATC) and the members of the Maritime Trade Advisory Board (MTAB) were obtained from Hazel Brown, one of the project consultants. These members were contacted by a letter (Appendix E) asking that they nominate persons involved with programs which met the established criteria.

Marie Piekarsky, project consultant, provided a list of key people who operated or knew of people who operated competency-based programs in the health professions. This group was contacted (Appendix F) to ask for their assistance in identifying appropriate programs.

Staff members at The Center for Vocational Education who had been or were in the process of operating projects which dealt directly or interfaced with the private sector contributed a list of agencies to consider. The ASTD letter (Appendix D) was sent to this group because the activities of both groups were similar.

Subsequent Contacts

In many cases the public sector contacts nominated people at the state department of education level. These people were not the target group, i.e., qualified to describe in detail a specific competency-based vocational program or course. Therefore, in order to locate programs at the local level, a letter (Appendix G) was designed asking people to nominate local school contact persons. This letter was sent to the above public sector nominees with the more specific request for names of people involved with competency-based adult vocational programs in local schools.

Those people nominated to participate in the survey were placed on a cumulative list of potential respondents. Where nominations were administrators rather than teachers, a letter and postcard was mailed (Appendix H). The purpose of this letter was to determine whether these schools possessed competency-based adult vocational courses, and whether they wished to participate in the survey. To expedite this inquiry, a postcard was enclosed for indicating intent. Administrators indicated the number of instructor surveys needed if they wished to participate. It had been suggested that several programs of the National Association of Trade and Technical Schools (NATTS) were competency-based. The 1976-77 directory of NATTS was reviewed and a sample of 200 schools was drawn to receive the letter and postcard sent to the administrators. The responses to these inquiries were placed on the list of potential respondents.

Approximately 1,900 program contact persons were nominated through the variety of procedures described. The cumulative list of potential respondents was scrutinized to avoid duplication of nominees or programs within a school prior to mailing. This final list contained 1,657 nominations to participate in the survey.

In addition, a survey and letter (Appendix I) was sent to each of the 99 ASTD chapter presidents asking for their assistance in publicizing the project to their members and in making the survey and copies available to those wishing to respond.

Project Consultants

Through the numerous contacts received from project mailings and through the review of the literature, several persons surfaced as having particular knowledge, experience, or expertise in competency-based adult vocational programs. These people were from both the private and public sectors, from the administrative and instructor levels, from curriculum development to administration. From a list of approximately 35 such individuals, seven were chosen to compose the National Panel of Consultants (Appendix J) to the project. Two others (Bill J. Koscheski of the Vocational-Technical Education Consortium of States and B. R. West of the Indiana State Department of Education) were selected to review the instrument.

Koscheski and West were asked to ponder the concept of competency-based adult vocational instruction, to specify tentative competency-based descriptors, and to suggest a possible means of measuring them. They were then asked to compare the project survey form with their conceptualizations and to make summary recommendations.

The National Panel of Consultants was convened at The Center to refine the instrument, to discuss the project staff's conception of CBE, and to structure future project activities. The consultants generated intensive critiques of project activities and suggested improvements in the data collection plan.

Instrument Development

One particular component of the literature search was to identify particular descriptors which appeared to be basic to competency-based instruction. As a result, a preliminary list was developed and synthesized into questionnaire items. These items were further refined so that there was little or no apparent overlapping and they constituted one section of the instrument. In addition to these descriptors, a number of demographic questions were generated for another section, and a rough format for open-ended course descriptions was designed as a third section. The project staff decided that the survey should be somewhat difficult to complete, contrary to common practice in survey research. The rationale for this decision was that only those people who were conducting competency-based programs and wished to proliferate the concept of competency-based adult vocational instruction should take the time and effort to respond.

These three sections were compiled, resulting in the first of several drafts of the instrument. The draft instrument then was reviewed by two Center staff members, each of whom directs a CBE-related project. This review resulted in the development of another draft of the instrument.

This draft was mailed to the two outside consultants for review, as discussed previously. Their review led the project staff to revise the instrument again.

This draft was reviewed by a group of three private sector reviewers who, in a meeting with the project staff, reviewed the cover letter and the entire instrument. This rather extensive review not only resulted in a more concise instrument, but it also led to some restructuring in order to appeal to the private sector as well as to the public sector. An additional outcome of this meeting

was the suggestion to have separate cover letters (Appendix K) designed for the public and private sectors. Also, it was suggested that the sequencing of the sections be arranged so that the more interesting course descriptors were in Section I, the more difficult demographic information in Section II, and the most difficult open-ended questions in Section III. Both of these suggestions were adopted. This draft was then further reviewed by the project staff for inconsistencies, to make the response options equivalent, and to remove irrelevant items.

This version was submitted to the National Panel of Consultants for comment and revision. The consultants met to review the project and to critique the instrument. The consultants recommended that several items be deleted and that rewording/restructuring of other items be considered. The suggestions were incorporated in a subsequent draft of the instrument. An additional outcome of this review was the addition to the survey of a glossary of terms so that all respondents would have the same understanding of common terms. This glossary is contained in Appendix L.

CBE programs in Minnesota and Ohio were identified, and a total of 15 were selected as pilot test sites. These programs included both public and private sectors, although most were in the public sector. The purpose of the pilot test was to have instructors complete the instrument to determine difficulty of items, time needed, appropriateness of items, and especially the degree to which the instrument was helpful in collecting accurate information on the courses.

The pilot test was administered in Ohio on site with a member of the project staff present to assist with any questions. In Minnesota it was administered by the Adult Vocational Director in a large school system with many adult vocational instructors. The instructors' suggestions were incorporated in the questionnaire at the completion of the pilot testing.

This draft was reviewed by the project staff and refined to include boxes for responses, keypunching codes, and a project logo. A copy of the final instrument is contained in Appendix M.

Data Collection

The mailing of the letter to approximately 350 administrative contacts with an enclosed postcard (Appendix H) was followed-up by a telephone call to a random sample of 15 non-respondents. The calls were made to determine whether there was some particular reason why they failed to respond. Table 1 contains a representation of the responses received from this follow-up. A review of the table reveals that the majority of those contacted indicated that they never received the letter or that there was no response since the school offered no CBE courses. These and the remaining responses indicate that the persons failing to return the postcard were different from those who did return the postcard in that they either did not have a CBE program or did not wish to participate.

The survey was mailed early in April 1977 to 1,657 individuals. Each recipient received a cover letter (Appendix K), a glossary of terms (Appendix L), a copy of the instrument (Appendix M), and a brochure (Appendix N) which further described the intent and goals of the project. The survey was designed so that upon completion the respondent was to simply fold it in half, fasten it, and mail it. Postage was pre-paid and the return address was printed on the back.

After 10 working days, a follow-up request (Appendix O) was mailed to non-respondents. This letter described the survey and reemphasized the importance of responding.

After 20 working days, a random sample of 98 non-respondents was taken, and a telephone follow-up was conducted. In Table 2 the responses to this further inquiry are described. As

Table 1

Findings of the Telephone Follow-up of Postcard Non-Respondents[a]

	Number	Percent
Never received the letter	5	33.3
No CBE courses	4	26.7
Passed letter on to subordinate	2	13.3
No longer at address	2	13.3
Not sure whether CBE	1	6.7
Not reachable	1	6.7
TOTALS	15	100.0

[a]As of date of follow-up, 189 postcards had been returned.

Table 2

Findings of the Telephone Follow-up of the Survey Non-Respondents[a]

Response to Call	Number	Percent
Survey is in the mail, being completed, passed on to subordinate or received during follow-up	35	35.8
Person unreachable (on vacation, no phone, no answer, etc.)	20	20.4
Person never returned call after two tries	14	14.3
Program/course not CBE	10	10.2
Person no longer employed in program	6	6.2
Person did not receive the survey (sent another)	5	4.6
Program/course not adult education	3	3.1
Program/course degree granting	2	2.1
School out of business	1	1.1
No time to complete survey	1	1.1
Respondent non-English speaking	1	1.1
TOTALS	98	100.0

[a]As of date of follow-up, 232 usable surveys had been received.

indicated in this table the largest number of respondents said that the survey was in the mail, in the process of being completed, or passed on to a subordinate (and would be checked on). An interesting aside is that of the 35 respondents answering this way, only four surveys were returned.

To help determine the sensitivity of the instrument, based on high scores and unusually good course descriptions, 10 exemplary programs were selected for on-site visitation. In-depth interviews provided more detailed information than was possible to obtain by questionnaire. These programs were scattered throughout the nation and represented programs in the private and public sectors. A list of those programs and the site visit reports are in Appendix P.

Where possible classes/training sessions were observed so that an accurate impression of competency-based instruction could be gained. For the most part the on-site visitation consisted of conversation with those people responsible for the development, operation, and/or management of the program. Questions asked and information gathered pertained directly to the mechanics of the course(s) and course structure. Data gathered were compared with the program's completed survey to assess the survey's sensitivity. Considerable data were obtained relative to the administration of programs. This information proved most valuable in identifying topics and presenters for the National Workshop held in conjunction with the project.

After each site visit, an extensive report was completed by the observer relative to all aspects of the visitation. Site visit reports are included in Appendix P.

Data Analysis

The analyses performed on the response data were primarily exploratory in nature. The instrument, designed for computer analysis, included the coding of open-ended responses. This section contains a description of the coding of the instrument, the analyses performed within each of the three sections of the instrument, and the analyses performed among the three sections of the instrument.

Coding

The instrument was designed so that respondents would mark their answers in a box(es) placed at the far right of each item. Beside each box were numbers instructing the keypunch operator in which columns the data were to be punched. This pre-planning was performed for Sections I and II. However, it had not been planned that Section III would be content analyzed but used only for entry into the *National Directory*. As responses began to arrive, project staff discovered that the comments in Section III were quite valuable from a qualitative standpoint and warranted inclusion in the data analyses.

The six open-ended items in Section III were content analyzed to determine if there were any particular aspects which tended to exemplify strong programs on the one hand and weaker programs on the other. Strength, here, refers to the extent to which descriptions were supportive of descriptors of exemplary competency-based instruction that were contained in Section I. Categories and criteria identifying these categories were formed so that the six open-ended items could be weighted "1" for strong evidence, "2" for moderate evidence, and "3" for weak evidence. These items were weighted 1, 2, or 3 and a total of these six scores was calculated and coded.

Analysis of Sections I, II, and III

Frequency counts were generated for each of the items on the instrument as well as the encoded items in Section III. The statistics computed were the mean, median, mode, range, minimum and maximum scores, variance, standard deviation, and standard error. All were computed due to the different levels of measurement contained in the instrument. For instance, where the mean might be an inappropriate statistic to report, the median would also have been computed and available for reporting.

An additional analysis which was performed on Section I consisted of totaling the responses for each of the 19 descriptors. This was performed only after all responses of "4—unusable or not applicable" were converted to "3—does not possess." This conversion was made because either response, in effect, had the same meaning. These totals were then divided into three categories representing high, medium, and low scoring programs.

Two analyses were performed to investigate the relationship between variables in Section I and the variables (criterion questions) in Section III which indicate the extent to which a course is competency-based. The first analysis was a linear regression in which the sum of the six competency-based variables or criterion questions (Section III) comprised the criterion and the 19 course descriptor variables (Section I) the predictors. The second analysis was a canonical correlation. One set of variables included the 19 course descriptor variables, and the other consisted of the six criterion questions from Section III. The purpose of these analyses was to determine which course descriptor variables and criterion questions were most closely related to strong programs of competency-based adult vocational education.

CHAPTER III

FINDINGS

As a result of the project survey, a number of important findings were determined about the status of competency-based adult vocational education programs. These findings will be presented and discussed in this chapter.

Descriptive Data

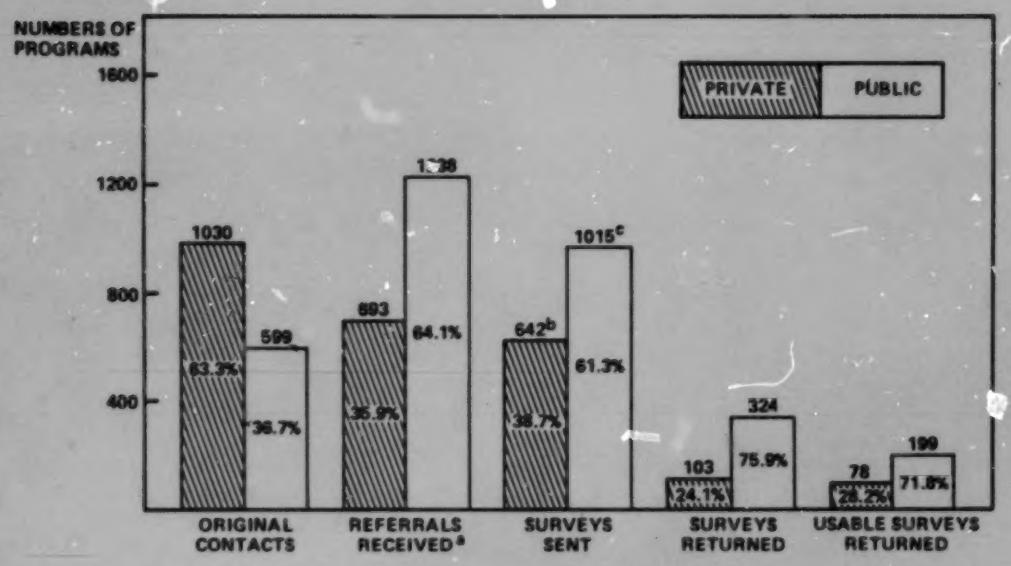
Responses

In response to the project survey, 277 usable responses were received. These survey responses came from 42 of the 50 states and the Virgin Islands. The persons selected to receive the survey were identified by procedures which were discussed in Chapter II. The relatively low response rate to the survey, in spite of follow-up procedures used and the 14-week period for accepting returns, should not be too surprising. Several persons who provided nominations indicated that they were not sure who was involved with competency-based adult vocational programs, so they frequently sent personnel or institutional directories of various kinds, or nominated people who "may be involved." Also, few people making nominations expressed confidence that their nominees were outstanding prospects for the survey. In addition, as was explained in Chapter II, project staff deliberately planned for the instrument to be difficult to complete so that responses from relatively weak competency-based programs might be discouraged.

Figure 1 illustrates the extent of the original canvassing, the number of referrals received, the number of surveys sent, and the number of surveys returned. These figures are further divided into the private and public sectors in order to illustrate the extent of coverage within each group.

As shown in this figure, a concerted effort was made to include the private sector because the project staff originally suspected it was there that most competency-based isntruction occurred. But, more referrals were received from the public sector than the private sector, resulting in more surveys being sent to the public sector than the private sector. The usable response rate was 12.1 percent from the private sector and 19.6 percent from the public sector, or 16.7 percent overall.

Although the return rate was low in both cases, it was higher from the public sector than from the private. A plausible explanation for the relatively poor response from the private sector is perhaps the proprietary concerns of competitive practices coupled with the desire "to keep a good thing secret." Also, it is conceivable that the responses did, in fact, indicate the extent of competency-based training in the private sector. Among those who responded, chi square (x^2) analysis revealed a significant difference between private and public sectors on the "do not publish" option in Section III of the questionnaire ($x^2 = 4.99$; $p < .05$) with a relatively high proportion of respondents from the private sector being unwilling to have their course description printed in the *National Directory*.



[a]THESE NUMBERS MAY INCLUDE SOME DUPLICATES SINCE MORE THAN ONE PERSON MAY HAVE REFERRED A PERSON OR PROGRAM.

[b]THIS NUMBER INCLUDES ASTD CHAPTER PRESIDENTS.

[c]THIS NUMBER INCLUDES PROGRAMS CLASSIFIED "OTHER."

FIG. 1. CONTACTS AND RESPONSES FROM THE PRIVATE AND PUBLIC SECTORS

At any rate, for whatever reasons, the respondents to the survey were heavily represented by the public sector. In fact, the majority of those responding from the private sector were proprietary schools and not business, industry, or labor training departments. In Table 3 the response rates for each group surveyed are indicated. Table 3 indicates that many of the returned surveys were not usable. Most of the unusable returns resulted from incomplete responses in Sections I and II of the questionnaire. A few were unusable because they were from degree-granting programs.

Characteristics of Programs

Section II of the survey contained items concerning demographic characteristics of the respondents' programs. Some of these items, such as questions about placement and follow-up programs, were not unique to competency-based programs. Others were, such as questions about open entry/open exit options, and the number of terminal performance objectives based upon competencies (tasks) identified in a job analysis.

Types of courses. The competency-based adult vocational courses identified in the survey were categorized by the six recognized vocational education service areas, even though many of the courses are taught in the private sector. As the data in Table 4 indicate, over half of the courses were classified in the trade and industrial education area. Business and office education courses comprised almost 12 percent. Very few courses were found in distributive education (2.5 percent), home economics (1 percent), and agricultural education (less than 1 percent). A miscellaneous category, which made up almost 9 percent of the total, consisted of courses in management training,

Table 3

Survey Returns Categorized by Respondent Types

Types of Respondents	Total Surveys Mailed		Total Returns		Usable Returns	
	Number	% of total	Number	% of those mailed	Number	% of those mailed
Business, Industry & Union	264	15.9	49	18.6	34	12.9
Public Secondary & Technical Institutes—area voc. sch., sch. district contacts	548	33.2	143	26.1	75	13.7
Adult Skills Centers—skills centers	82	4.9	44	53.7	40	48.8
Proprietary Schools	254	15.3	54	21.1	44	17.3
Junior & Community Colleges	241	14.5	80	33.2	31	12.9
Universities	37	2.2	11	29.7	10	27.0
Other—city govt., hospitals, health training	107	6.5	46	43.0	43	40.2
ASTD Chapter Presidents[a]	124	7.5				
TOTAL	1,657	100.0	427	25.8	277	16.7

[a]ASTD members come from both the public and private sectors. Chapter presidents distributed the surveys to members, so the category of these survey recipients cannot be determined, although most were thought to be in the business, industry, labor category. The responses from this group are spread across the other categories, based upon identifying information provided in Section III of the questionnaire.

Table 4

Categories of Course Titles Reported

Service Area	Number	Percent
Agricultural Education	2	0.72
Business and Office Education	61	22.02
Distributive Education	7	2.53
Health Occupations	33	11.91
Home Economics	3	1.08
Trade and Industrial Education	147	53.07
Miscellaneous	24	9.67
TOTAL	277	100.00

instructor training, and others that were not classifiable in the typical vocational education service areas. A more detailed classification of courses is contained in a companion publication, *The National Directory of Selected Competency-Based Adult Vocational Education Programs.*

Duration of courses. Respondents were asked to report the minimum, average, and maximum hours that were required for an adult to complete the course. Where hourly designations were not applicable, respondents could identify their courses as completely open entry/open exit. The responses to this item are displayed in Table 5. A review of this table indicates that the variability of the hours required was large, ranging from one hour to 9,600 hours.

Table 5

Duration of Courses in Hours

	n	Mean	Median	s.d.	Range
Minimum Hours	166[a]	515.8	140.5	833.9	1-8,000
Average Hours	170[a]	545.1	160.5	947.6	2-8,000
Maximum Hours	162[a]	658.2	220.5	1,111.9	3-9,600

[a]There were 80 respondents (29 percent of the total) who reported their programs were completely open entry/open exit.

However, when looking at the median of the distributions (which is more appropriate than the mean since the median is not affected by the few extreme scores), there is evidence that these competency-based courses tend to take less than an academic or fiscal year to complete. This finding, when viewed with the months in which courses operate (Table 6), indicates that students could conceivably complete several courses within a program year (if the courses are sequenced) and that courses can service several groups of students during a program year.

As indicated in Table 6, most courses operate on a year-round basis. Those which do not operate year-round tend to follow the academic schedule of nine months, September through May.

There were 80 courses (29 percent of the total) in which no definite number of hours was required for completion. Students are allowed to enter when they wish and to exit when they complete the work. This open entry/open exit characteristic is generally viewed as a major criterion of competency-based instruction.

Competencies and terminal performance objectives. Two related questions in Section II asked respondents to (1) specify the number of competencies (tasks) identified for the entire course based upon the job analysis and (2) to specify the number of terminal performance objectives included in the course based upon the competencies (tasks) identified. These data are reported in Table 7. A substantial number of respondents did not complete these items; 233 responded to the first of these items and only 216 responded to the latter. With 44 respondents omitting the first question and 61 omitting the second, the clarity or specificity of some of the

Table 6

Frequency Distributions of Months Courses are Offered

Month(s) Offered	Yes		No	
	n	%	n	%
All Year	151	54.5	126	45.5
January	112	40.4[a]	165	59.6
February	113	40.8	164	59.2
March	119	43.0	158	57.0
April	113	40.8	164	59.2
May	110	39.7	167	60.3
June	66	23.8	211	76.2
July	39	14.1	238	85.9
August	30	10.8	247	89.2
September	106	38.3	171	61.7
October	114	41.2	163	58.8
November	113	40.8	164	59.2
December	102	36.8	175	63.2

[a]The percentages of "Yes" responses for the individual months are lower than they should be since respondents who checked "All Year" did not check the individual months.

Table 7

Competencies (Tasks) and Terminal Performance Objectives Reported for Courses

Item	Mean	Median	Range
Competencies (tasks) identified for course (n = 233)	72.0	31.2	1-999
Terminal performance objectives, based upon competencies (tasks) included in course (n = 216)	59.6	23.5	1-870

competency-based courses identified by this survey is not known. A few of these respondents provided persuasive evidence of competency-based instruction in the open-ended Section III of the questionnaire. As indicated in Table 7, the median number of competencies (tasks) identified for the courses was 31.2, ranging from 1-999. The median number of terminal performance objectives reported was 23.5, ranging from 1-870. In both cases the means are spuriously high due to a few extremely large numbers being reported for each question.

Enrollment by sex. Respondents were asked to indicate the approximate total enrollment in their courses by the learner's sex. This information is provided in Table 8. Female enrollments were reported in 209 courses by the 277 respondents, and males were enrolled in 228 courses. A large majority of the courses identified in the survey had both female and male enrollments. The median number of females enrolled was 16.2, ranging from 0-348. The median number of males enrolled was 21.9, ranging from 0-999. It appears that the large enrollment may best be explained by some courses being offered several times a year, with annual enrollment being reported in those cases.

Table 8

Course Enrollment by Sex of Learners

Sex	Mean	Median	Range
Female (n = 209)	35.4	16.2	0-348
Male (n = 228)	54.6	21.9	0-999

Advisory councils, placement programs, and follow-up. The use of advisory councils was a common feature of the courses surveyed, being reported in 69 percent of the cases. The response to the survey on this item is shown in Table 9. Respondents were asked whether the course had an "active" advisory council, which would encourage those respondents who had used an advisory council at one time—but not recently—to respond "No." An assumption was made that an "inactive" advisory council would be about the same as not having an advisory council.

Table 9

Frequency Distributions of Individual Program Elements

Program Element	Yes		No		Other		Total	
	n	%	n	%	n	%	n	%
Advisory Council	191	69.0	86	31.0	0	0.0	277	100
Placement Program	166	60.6	72	26.3	36	13.1	274	100
Follow-up System	184	70.0	58	22.1	21	8.0	263	100

Placement programs were also reported to be active in almost 61 percent of the respondents' courses. Table 9 illustrates the responses to the item asking whether the course had a placement program for completers. The majority of respondents noted that they had such a program. Many of the respondents who did not report placement programs indicated that (1) their course was merely a component of a larger program which had an overall placement program or (2) that the course was part of an employee training program, meaning the students were already employed.

When asked whether the courses had some form of a follow-up system for course completers, 70 percent of the respondents indicated that they did. The responses to this survey item are included in Table 9. Some respondents indicated that they were either developing such a procedure, were part of a larger system, or it was not applicable.

The make-up of these advisory councils was also investigated, and Table 10 illustrates these findings. Members of business and industry tended to be highly represented on these councils, with school officials also comprising much of the membership. The high percentage of business and industry members reported among active councils indicates interest in adult vocational programs by the private sector. One thing to be emphasized, however, is that "active" was not defined and could be interpreted to mean anything from monthly to yearly meetings, from genuine involvement to rubber stamping.

Table 10

Frequency Distributions of Advisory Council Member Types (n=277)

Type of Member	Yes		No	
	n	%	n	%
Union Representatives	44	15.9	233	84.1
Business Representatives	132	47.7	145	52.3
Industry Representatives	140	50.5	137	49.5
University Representatives	29	10.5	248	89.5
College Representatives	37	13.4	240	86.6
School Officials	131	47.3	146	52.7
Community Leaders	83	30.0	194	70.0
Private Proprietary School Officials	21	7.6	256	92.4
Others	51	18.4	226	81.6

Facility. Respondents were asked to report the type of facility in which courses were conducted. The item was designed to gather data on the type of institution or agency providing the course. The types of facilities represented in the survey sample are reported in Figure 2.

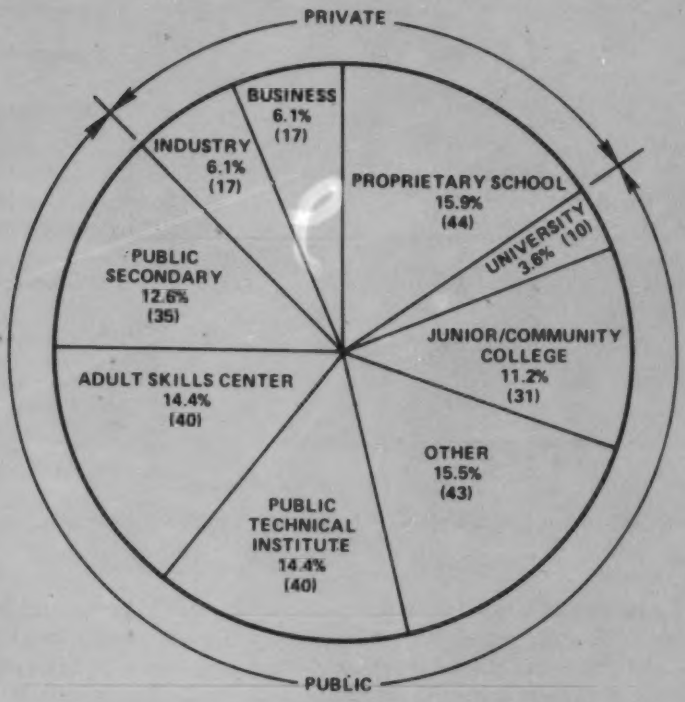


FIG. 2. TYPES OF FACILITIES IN WHICH COURSES WERE OFFERED
(n=277)

Proprietory schools, adult skills centers, public technical institutes, public secondary schools, and junior/community colleges were almost equally represented among the respondents. The "Other" category represented courses conducted in adult evening programs, technical colleges, and private schools that seemed to be combinations of the facility choices provided in the questionnaire. There were four responses to the survey from courses being conducted in union-sponsored facilities. All four of these responses were from a school operated by the Seafarers' International Union. The person who completed the questionnaire checked both "Industry" and "Union Sponsored" facility, so the former designation was selected for data analysis.

Problems shared by respondents. An open-ended question in Section II was: "Would you please share with us any problems that you might have encountered in developing and operating this competency-based course?" Respondents shared 132 problems. These were content analyzed and grouped into five areas, as shown in Table 11. The most common type of problem mentioned (31 percent) related to the adult learners enrolled. Most respondents who reported this type of

problem represented adult skills centers, which work to a relatively large extent with the unemployed or the underemployed, the unmotivated, and those who are the victims of economic and social discrimination.

Keeping the curriculum up-to-date was the next most common problem (27 percent), followed by administrative and organizational difficulties (24 percent). Nine percent of the problems mentioned involved lack of time, and 8 percent of the problems emphasized inadequacies in materials and equipment (Table 11).

Table 11

Problems Mentioned in Developing and Operating Competency-Based Courses

Problem Types	Number	Percent
Learner problems (e.g., low ability levels, unqualified)	41	31.1
Keeping the curriculum up-to-date	36	27.3
Administrative and organizational difficulties	32	24.2
Lack of time	12	9.1
Materials and equipment	11	8.3
TOTALS	132	100.0

Ideas for improvement. A follow-up question to the one regarding problems with competency-based courses asked: "Would you please share with us any ideas on how your competency-based course can be improved?" Respondents offered 117 suggestions for course improvement. Nearly half the ideas were in the area of curriculum and program revision. Another 18 percent of the ideas for improvement called for updated materials and equipment, seemingly closely related to curriculum and program revision. Nearly 14 percent of the suggestions for course improvement involved staff preparation. Almost 10 percent of the ideas were in the area of improved linkages with business, industry, and labor. Improved evaluation methods were suggested in 6 percent of the cases and stronger administrative support in 5 percent of the cases. Table 12 contains the data on ideas for improvement. Interestingly, suggestions were not given for dealing with learner problems, the most common type of problem reported. There appears to be a gap between the problems encountered and the suggestions offered for course improvement.

Descriptors of Competency-Based Courses

Section I of the questionnaire contained 19 items which were identified in the literature as descriptors of competency-based instruction. These items were divided into two categories—one describing the structure of the course, the other describing the terminal performance objectives.

Table 12

Suggested Ideas on Competency-Based Course Improvement

Idea Category	Number	Percent
Curriculum and program revision	56	47.9
Updating materials and equipment	21	17.9
Staff preparation	16	13.7
Better links with business, industry, and labor	11	9.4
Improved evaluation methods	7	6.0
Administrative support	6	5.1
TOTALS	117	100.0

The following discussion will focus on the results of this rating of courses by respondents on these descriptors.

In Table 13 the categories of ratings for each of the 19 descriptors as well as the mean and standard deviation of the responses are indicated. A review of the table indicates that the descriptors "definitely" possessed by the largest number of respondents were items 1, 3, 4, 7, 10, 11, and 18. These seven items appear to be basic descriptors for competency-based instruction, but are not foreign to other types of instruction. For example, item 18, "Objectives describe the tasks to be learned," is often claimed as a feature of more traditional instruction.

The descriptors unique to competency-based instruction seem to be those which a relatively small percentage of courses definitely possessed. Items 2, 13 and 15 were those items which had the highest mean responses (indicating relatively small numbers of courses which "definitely possess" the quality) on the descriptors. These three items are characteristic of most competency-based instruction since they represent a high degree of individualization of instruction, based on students' capabilities, needs, and learning styles. These findings suggest that many respondents are operating courses which are not completely competency-based. This statement is supported by other findings reported later in this chapter.

The predictability or discriminability of these items for exemplary competency-based instruction is discussed in a later section.

Criteria for Competency-Based Adult Vocational Education

Section III of the questionnaire contained six open-ended items which asked respondents to describe in detail particular basic elements of their competency-based courses. These six items

Table 13

Percentage of Responses and Means of Ratings of Competency-Based Descriptors (n=277)

	Definitely Possesses (1)	Somewhat Possesses (2)	Does Not Possess, Unusable, or Not Applicable (3[a])	Mean	s.d.
A. Structure of Course					
1. Learners are held responsible for meeting stated performance objectives	234 84.5%	39 14.1%	4 1.4%	1.17	.41
2. Learners are pre-assessed upon entry to determine learners' skills and objectives to be achieved, rather than all learners covering the same objectives	92 33.2%	85 30.7%	100 36.1%	2.03	.83
3. Learners know the measures for which they are held accountable	225 81.2%	47 17.0%	5 1.8%	1.21	.45
4. Instruction is segmented into manageable units, each containing related job skills	231 83.4%	38 13.7%	8 2.9%	1.20	.48
5. Learners are responsible for achieving the competencies as opposed to clock hours of instruction	178 64.3%	69 24.9%	30 10.8%	1.47	.68
6. Learner performance is recorded as each objective is achieved	195 70.4%	57 20.6%	25 9.0%	1.39	.65
7. Greater emphasis is placed upon exit requirements (proficiency) than upon entrance requirements	222 80.1%	41 14.8%	14 5.1%	1.25	.54
8. Competencies are derived from a task or job analysis of the particular job	198 71.5%	65 23.5%	14 5.1%	1.34	.57
9. Student assessment criteria are based upon competencies (i.e., criterion-referenced testing is used)	195 70.4%	54 19.5%	28 10.1%	1.40	.67
10. Continuous evaluation and feedback to the learner is provided	225 81.2%	47 17.0%	5 1.8%	1.21	.45
11. Individual learner competence is determined by individual learner performance	232 83.8%	38 13.7%	7 2.5%	1.19	.45
12. Each learner is allowed to proceed to subsequent instruction as quickly as performance objectives are attained	172 62.1%	49 17.7%	56 20.2%	1.58	.81
13. Instruction offers learning alternatives for learners (i.e., different approaches)	116 41.9%	112 40.4%	49 17.7%	1.76	.73
14. Instruction specifies media to be used to accomplish objectives	192 69.3%	69 24.9%	16 5.8%	1.37	.59
15. If a learner does not achieve a learning task, a different method of instruction is provided or suggested	114 41.2%	116 41.9%	47 17.0%	1.76	.72
B. Terminal Performance Objectives					
16. Objectives describe the conditions under which the learner will be expected to demonstrate the level of competency	188 67.9%	75 27.1%	14 5.1%	1.37	.58
17. Objectives describe the level of competency or standards (set by business or industry) to be demonstrated	196 70.8%	59 21.3%	22 7.9%	1.37	.63
18. Objectives describe the tasks to be learned	225 81.2%	46 16.6%	6 2.2%	1.21	.46
19. Objectives are structured in a sequential order or in order of task difficulty	166 59.9%	78 28.2%	33 11.9%	1.52	.70

[a]Response categories 3 (Does Not Possess) and 4 (Unusable or Not Applicable) were combined since both collected, in effect, the same data.

were designed with the intent that appropriate, detailed descriptions offered by the respondents would be published in the *National Directory of Selected Competency-Based Adult Vocational Education Programs.* These responses were content analyzed and assigned weights by project staff in terms of having strong (1), moderate (2), or weak (3) evidence of these competency-based elements. Table 14 presents the distribution of these assigned weights. The element on which the courses were strongest was student testing. The courses were not exceptionally strong in any of the items, however. Some course descriptions received strong weights in each of the six areas. Those courses tended to surface as being the more exemplary.

Table 14

Frequency Distributions of Weights Assigned to Competency-Based Criteria (n=259)[a]

Competency-Based Criteria	Weights Assigned to Competency-Based Criteria				
	Strong (1)	Moderate (2)	Weak (3)	Mean	s.d.
How were tasks identified in the job analysis?	88 34.0%	127 49.0%	44 17.0%	1.84	.69
How were performance objectives developed and validated?	99 38.2%	131 50.6%	29 11.2%	1.72	.65
How is instruction delivered? (For example, via modules, open entry/open exit, or other format)	123 47.5%	100 38.6%	36 13.9%	1.66	.70
What is the nature of student testing? (For example, describe basis, methods, extent)	155 59.8%	92 35.5%	12 4.6%	1.43	.58
What is the nature of course evaluation? (How reviewed, revised, who is involved, etc.)	104 40.2%	103 39.8%	52 20.1%	1.81	.75
What is the nature of the support system of your instruction? (i.e., advisory groups, administration, funding base)	93 35.9%	114 44.0%	52 20.1%	1.84	.73

[a]Eighteen respondents did not complete this section of the questionnaire.

A total score was computed by summing the six weights assigned to each description. Courses with total scores from 6-9 were classified as "strong." Courses with scores from 10-13 were classified as "moderate," and those with scores from 14-17 were classified "weak." The distribution of the three groups is shown in Figure 3. The data indicate a substantial number of courses (42 percent) were weighted as strong examples of competency-based adult vocational instruction by the project staff. These proportions are particularly interesting when compared to a similar distribution of the total of the responses to the 19 course descriptors in Section I. This comparison (shown in Table 15) indicates that respondents tended to rate their courses very highly. Weightings assigned by the project staff to descriptions written by respondents were noticeably weaker. Ratings in Section I were frequently poorly documented in Section III. However, the reader should keep in mind that Section I was designed for respondents to indicate the extent to which their courses

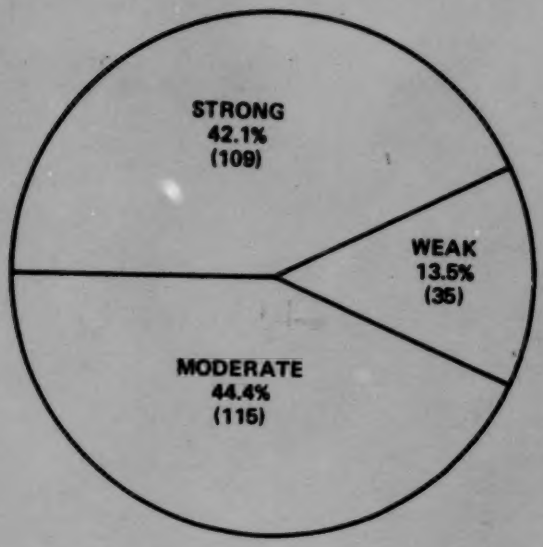


FIG. 3. DISTRIBUTION OF COMPETENCY-BASED CRITERIA TOTAL SCORE (n=259)

Table 15

Comparison of Respondents' Ratings with Project Staff Weightings

Respondents' Ratings	Project Staff Weightings			Total
	Strong (1) (6-9)	Moderate (2) (10-13)	Weak (3) (14-17)	
Definitely Possesses (1) 19-31	94	98	25	217
Somewhat Possesses (2) 32-44	15	16	10	41
Does Not Possess (3) 45-57	0	1	0	1
TOTAL	109	115	35	259

were competency-based using 19 descriptors. Section III was designed for respondents to describe six basic features of their competency-based courses. There is a distinction here which subsequent analyses performed between the two sections will illustrate.

Comparison of Private and Public Sectors

Analyses were performed to determine if there were any differences between the public and private sectors on selected variables in the study. These analyses will be discussed in this section.

Advisory Councils

Advisory councils were operated by respondents in both the private and public sectors. However, there was a substantial difference in the percentages between the two groups. These data are presented in Table 16. A chi square test indicates that the difference between these sectors is highly significant. Advisory councils were much more prevalent in the public sector than in the private sector, by a margin of 78 percent to 46 percent. This is understandable since public programs, supported by public monies, must be accountable to a much broader constiuency than is true in the private sector. Advisory councils may be used both to provide needed content input and also to make the courses more visible to the public. Private sector programs probably do not have this latter concern to as great a degree, and in this sector advisory councils apparently are used primarily for content input.

Table 16

Comparison of Private and Public Sectors' Use of Advisory Councils (n=277)

Sector	Yes		No	
	n	%	n	%
Private	36	46.2	42	53.8
Public	155	77.9	44	22.1
TOTAL	191	69.0	86	31.0

Chi square = 24.90; df = 1; $p < .000$

The membership of these councils also differs between the sectors. Table 17 indicates that there are significant differences between the private and public sectors on each of the types of representation to the councils. Business, industry and school officials were common types of representatives in both sectors, but the public sector makes greater use of every member type except proprietary school officials. The probable reason for this exception is the substantial number of proprietary schools represented by private sector respondents. The greatest difference between the private and public sectors on this variable was the involvement of community leaders on advisory councils, with only one instance being reported in the private sector.

Table 17

Comparison of Public and Private Sectors in Terms of Advisory Council Representatives (n=277)

Types of Representatives	Private		Public		Total		x^2	df	p
	n	%	n	%	n	%			
Union	4[a,b]	5.1	40	20.1	44	15.9	8.31	1	.004
Business	15	19.2	117	58.8	132	47.7	33.59	1	.000
Industry	24	30.8	116	58.3	140	50.5	15.90	1	.000
University	2	2.6	27	13.6	29	10.5	6.11	1	.013
College	3	3.8	34	17.1	37	13.4	7.38	1	.007
School Officials	17	21.8	114	57.3	131	47.3	26.91	1	.000
Community Leaders	1	1.3	82	41.2	83	30.0	40.68	1	.000
Proprietary School Officials	15	19.2	6	3.0	21	7.6	18.78	1	.000
Other	13	16.7	38	19.1	51	18.4	.09	1	.767

[a] Frequencies represent only the affirmative (Yes) answers to the items.

[b] Chi square (x^2) tests should be interpreted with caution when there are fewer than five cases in a cell.

The reader should be aware that the significant chi square (x^2) values are a function of differences between the frequency of yes/no responses for each "representative" category when divided into private and public sectors.

Placement and Follow-Up

Analyses were performed on the survey items regarding the extent of placement and follow-up elements in their courses. Table 18 presents the comparison between private and public sectors in these areas. A review of this table indicates that there are no significant differences between the sectors on either of the two items. At first, this is rather surprising since courses in the private sector are usually viewed as primarily employee training in which placement and follow-up elements seem inappropriate. However, recalling previous data indicating that the private sector is represented heavily by proprietary schools, the non-significance of the comparison becomes clearer. Private proprietary schools are similar to public institutions in their need to place students and to study the effectiveness of their programs.

Duration of Courses

The private/public sector comparison was extended to investigate any differences between the months of the year during which courses operate. An analysis of the hours of instruction which

Table 18

Comparison of Private and Public Sectors on Placement and Follow-up Programs

Sector	Yes		No		Other	
	n	%	n	%	n	%
			Placement Program (n=274)			
Private	48	61.5	19	24.4	11	14.1
Public	118	60.2	53	27.0	25	12.8
TOTAL	166	60.6	72	76.3	36	13.1
Chi square = .25; df = 2; p<.884						
			Follow-up Program (n=263)			
Private	59	76.6	12	15.6	6	7.8
Public	125	67.2	46	24.7	15	8.1
TOTAL	184	70.0	58	22.1	21	8.0
Chi square = 2.76; df = 2; p <.251						

were required for learners to complete the respondents' courses showed a significant difference ($t = 2.07$; $df = 164$; $p < .04$) in the minimum hours required. The private sector showed a significantly higher minimum number of hours required of their learners than the public sector. On the "average" number of hours and the maximum number of hours there were no significant differences between the two groups.

There were significant chi square differences between the private and public sectors on the number of programs operating all year and for the months of September through May. The results of this analysis are shown in Table 19.

The above differences are deceiving because one would expect the private sector to be less affected by academic year schedules than the public sector. This supposition is well supported by the significantly higher number of private sector respondents who reported operating year-round Thus, the monthly differences are an artifact of the data in that those respondents who indicated that they operate year-round were not included in the "monthly" breakdown. The reader should note in the private sector that the frequencies of "yes" responses for the individual months are lower than the number of all year programs. Consequently, private sector respondents who operate year long are relatively insensitive to academic year schedules and summer vacations, whereas

Table 19

Comparison of Public and Private Sectors Regarding Months of Course Operation (n=277)

Months of Operation	Private		Public		Total		x^2	df	p
	n	%	n	%	n	%			
All Year	58[a]	74.4	93	46.7	151	54.4	16.15	1	.000
January	20	25.6	92	46.2	112	40.4	9.03	1	.003
February	16	20.5	97	48.7	113	40.8	17.34	1	.000
March	19	24.4	100	50.3	119	43.0	14.29	1	.000
April	16	20.5	97	48.7	113	40.8	17.34	1	.000
May	17	21.8	93	46.7	110	39.7	13.53	1	.000
June	12	15.4	54	27.1	66	23.8	3.64	1	.056
July	12	15.4	27	13.6	39	14.1	.04	1	.842
August	6	7.7	24	12.1	30	10.8	.70	1	.403
September	19	24.4	87	43.7	106	38.3	8.09	1	.005
October	17	21.8	97	48.7	114	41.2	15.71	1	.000
November	18	23.1	95	47.7	113	40.8	13.11	1	.000
December	15	19.2	87	43.7	102	36.8	13.41	1	.000

[a]Frequencies represent only those "Yes" answers to the items.

those who operate periodically or on an academic year schedule appear to be affected more by summer vacations of learners and instructors.

Competency-Based Descriptors

Responses to the 19 competency-based descriptor items included in Section I of the survey for each sector are reported in Table 20. There are three descriptors (items 12, 13 and 15) which show significant differences between the private and public sectors. These items concern flexible scheduling and the provision of alternative learning approaches. On each of these items the private sector was less likely to possess the quality (low means are associated with "definitely possess"). A possible explanation for this phenomenon is that open entry/open exit scheduling and recycling might be more easily operated in a formal school setting, but arguments could be made that the opposite is the case. A more likely explanation is that public educators are more in the forefront on these concepts than trainers in the private sector.

Table 20

Comparison of Public and Private Sectors on the Ratings of Descriptors in Section I (n=277)

Sector	n	Mean	Standard Deviation
1. Learners are held responsible for meeting stated performance objectives.			
Private	78	1.21	.49
Public	199	1.16	.38
t = .89; df = 275; p < .37[a]			
2. Learners are pre-assessed upon entry to determine learners' skills and objectives to be achieved, rather than all learners covering the same objectives.			
Private	78	2.12	.81
Public	199	2.00	.84
t = 1.08; df = 275; p < .28			
3. Learners know the measures for which they are held accountable.			
Private	78	1.15	.43
Public	199	1.23	.45
t = -1.21; df = 275; p < .23			
4. Instruction is segmented into manageable units, each containing related job skills.			
Private	78	1.19	.40
Public	199	1.20	.49
t = -.06; df = 275; p < .95			
5. Learners are responsible for achieving the competencies as opposed to clock hours of attendance.			
Private	78	1.55	.75
Public	199	1.43	.66
t = 1.31; df = 275; p < .19			
6. Learner performance is recorded as each objective is achieved.			
Private	78	1.42	.71
Public	199	1.37	.62
t = .59; df = 275; p < .56			

[a]Significance levels are for two tailed tests.

Table 20 - Continued

Sector	n	Mean	Standard Deviation
7. Greater emphasis is placed upon exit requirements (proficiency) than upon entrance requirements.			
Private	78	1.31	.59
Public	199	1.23	.52
$t = 1.14$; $df = 275$; $p < .26$			
8. Competencies are derived from a task or job analysis of the particular job.			
Private	78	1.32	.57
Public	199	1.34	.57
$t = -.28$; $df = 275$; $p < .78$			
9. Student assessment criteria are based upon competencies (i.e., criterion-referenced testing is used).			
Private	78	1.29	.61
Public	199	1.44	.69
$t = -1.60$; $df = 275$; $p < .11$			
10. Continuous evaluation and feedback to the learner is provided.			
Private	78	1.14	.39
Public	199	1.23	.47
$t = -1.51$; $df = 275$; $p < .13$			
11. Individual learner competence is determined by individual learner performance.			
Private	78	1.18	.39
Public	199	1.19	.48
$t = -.19$; $df = 275$; $p < .85$			
12. Each learner is allowed to proceed to subsequent instruction as quickly as performance objectives are attained.			
Private	78	1.90	.91
Public	199	1.46	.73
$t = 4.21$; $df = 275$; $p < .000$			

Table 20 - Continued

	Sector	n	Mean	Standard Deviation
13.	Instruction offers learning alternatives for learners (i.e., different approaches).			
	Private	78	2.03	.76
	Public	199	1.65	.70
	$t = 3.89$; $df = 275$; $p < .000$			
14.	Instruction specifies media to be used to accomplish objectives.			
	Private	78	1.32	.57
	Public	199	1.38	.60
	$t = -.78$; $df = 275$; $p < .44$			
15.	If a learner does not achieve a learning task, a different method of instruction is provided or suggested.			
	Private	78	1.96	.73
	Public	199	1.68	.71
	$t = 2.97$; $df = 275$; $p < .003$			
16.	Objectives describe the conditions under which the learner will be expected to demonstrate the level of competency.			
	Private	78	1.31	.61
	Public	199	1.40	.57
	$t = -1.15$; $df = 275$; $p < .25$			
17.	Objectives describe the level of competency or standards (set by business or industry) to be demonstrated.			
	Private	78	1.33	.64
	Public	199	1.39	.62
	$t = -.64$; $df = 275$; $p < .52$			
18.	Objectives describe the tasks to be learned.			
	Private	78	1.14	.42
	Public	199	1.24	.47
	$t = -1.56$; $df = 275$; $p < .12$			
19.	Objectives are structured in a sequential order or in order of task difficulty.			
	Private	78	1.58	.73
	Public	199	1.50	.69
	$t = .85$; $df = 275$; $p < .40$			

Competency-Based Criterion

Section III of the questionnaire included six open-ended questions for respondents to describe components of their courses. The strategy behind these criterion questions has been discussed previously. The results of the scoring of these criterion items for the two sectors are displayed in Table 21.

A review of this table shows that there was only one significant difference between the sectors. The private sector respondents displayed significantly weaker ratings on the item of instructional delivery. This finding supports the differences displayed by the competency-based descriptors. Private sector respondents reported less flexibility in operating open entry/open exit programs, thus reducing the options available to the learner for progressing through a course or program of study.

No other significant differences were found between the two sectors on these competency-based criterion questions. The inclusion of proprietary schools in the private sector, as discussed earlier, may have caused more similarities between the sectors than if proprietary schools had not been included.

Descriptor Score Comparisons with Other Variables

As discussed earlier, the 19 competency-based descriptors (Section I) were summed to form a total score for each respondent. This score was then divided into three categories to be indicative of the degree to which courses may be characterized by those descriptors. The categories were: definitely possess the descriptors (total = 19-31), somewhat possess the descriptors (total = 32-44), and does not possess the descriptors (total = 45-57).[2] Several of the items in the survey were compared with this three-category variable to determine whether any differences existed among these items and the levels of strength of course descriptors. These comparisons will be discussed in some detail in this section.

Advisory Councils

The comparison between the descriptor total from Section I of the questionnaire and the possession of an advisory council is presented in Table 22. A review of this table indicates there is a significant positive relationship between the possession of an active advisory council and the tendency to definitely possess the descriptors of competency-based instruction. This finding is not surprising since advisory council functions are frequently involved in executing many of the descriptors. For example, using task or job analyses, determining conditions under which competencies are demonstrated, and so on, can be greatly enhanced by inputs of an advisory council.

An analysis was performed to investigate relationships between the descriptor totals and the types of members of advisory councils. The findings of these analyses are reported in Table 23 in which a significant difference exists between the descriptor totals and advisory council members representing business and industry. Those programs which rate high on the descriptors tend to have business and industry members to a significantly greater degree than those with lower ratings.

---

[2]The reader may recall the fourth rating category provided in the questionnaire, "4 = unusable or not applicable." This category was combined with the "3 = does not possess" category since they both collected, in effect, the same data.

Table 21

Comparison of Public and Private Sectors on the Weights Assigned to Criteria in Section III

Sector	n	Mean	Standard Deviation
	Method for Identification of Tasks		
Private	78	1.95	.72
Public	199	1.89	.74
$t = .61$; $df = 275$; $p < .55$			
	Development of Performance Objectives		
Private	78	1.77	.72
Public	199	1.83	.70
$t = -.64$; $df = 275$; $p < .52$			
	Instructional Delivery		
Private	78	2.04	.69
Public	199	1.64	.76
$t = 4.05$; $df = 275$; $p < .000$			
	Student Testing Procedures		
Private	78	1.62	.65
Public	199	1.52	.70
$t = 1.05$; $df = 275$; $p < .31$			
	Course Evaluation		
Private	78	1.92	.72
Public	199	1.86	.81
$t = .61$; $df = 275$; $p < .54$			
	Support System		
Private	78	2.01	.90
Public	199	1.88	.70
$t = 1.31$; $df = 275$; $p < .19$			

Table 22

Comparisons Among Levels of Descriptor Totals and Operation of an Active Advisory Council

Descriptor Total Score Categories	Active Advisory Council?			
	Yes		No	
	n	%	n	%
Definitely possesses (1) (19-31)	164	71.9	64	28.1
Somewhat possesses (2) (32-44)	27	57.4	20	42.6
Does Not Possess (3) (45-57)	0	0.0	2	100.0
TOTAL	191	69.9	86	31.0

Tau = .10; $p < .009$

Table 23

Comparison of Descriptor Total Levels and Advisory Council Member Types (n=277)

Types of Representatives	Descriptor Total Score Categories						x^2	df	p
	Definitely Possesses (1) (19-31)		Somewhat Possesses (2) (32-44)		Does Not Possess, Unusable (3) (45-57)				
	n	%	n	%	n	%			
Union	37[a]	16.2	7	14.9	0	0.0	.11[b]	1	.80
Business	117	51.3	15	31.9	0	0.0	5.68	1	.02
Industry	124	54.4	16	34.0	0	0.0	6.25	1	.02
University	24	10.5	5	10.6	0	0.0	.01	1	.99
College	32	14.0	5	10.6	0	0.0	.42	1	.70
School Officials	114	50.0	17	36.2	0	0.0	3.79	1	.10
Community Leaders	69	30.3	14	29.8	0	0.0	.06	1	.80
Proprietary School Officials	21	9.2	0[c]	0.0	0	0.0	4.88	1	.05
Other	43	18.9	8	17.0	0	0.0	.17	1	.80

[a] Frequencies represent only the "Yes" answers to the items.
[b] Categories (2) and (3) were combined to compute the chi square statistics.
[c] Chi squares computed when a cell frequency is less than 5 should be interpreted with caution.

It is also noteworthy that reported involvement of proprietary school officials are all associated with the "definitely possesses" category. This is further evidence that much of the strength of competency-based instruction in the private sector, in the few instances found, is attributable in large part to proprietary schools.

Placement and Follow-Up

The placement and follow-up elements for each level of descriptor totals are illustrated in Table 24. A review of this table shows a significant difference between the possession of placement and follow-up elements and high ratings on the descriptors. As was the case with advisory councils, neither of these elements are unique to competency-based courses or programs but can be possessed by all types of vocational education. However, this finding indicates that the stronger competency-based courses tend to possess these elements. A pattern emerging from the data is that relatively strong competency-based instruction is associated with the more widely accepted practices of advisory council use, placement programs and follow-up activities. These practices are all appearing as indicators of program quality. However, the data do not permit cause and effect inferences to be made.

Table 24

Comparison of Descriptor Total Levels with Placement and Follow-up Activities

Descriptor Total Score Categories	Yes		No		Other	
	n	%	n	%	n	%
			Placement Program (n=274)			
Definitely Possesses	148	65.5	50	22.1	28	12.4
Somewhat Possesses	18	39.1	20	43.5	8	17.4
Does Not Possess	0	0.0	2	100.0	0	0.0
TOTAL	166	60.6	72	26.3	36	13.1
$x^2 = 14.19$; df = 2; $p < .001$						
			Follow-Up (n=263)			
Definitely Possesses	159	72.9	41	18.8	18	8.3
Somewhat Possesses	24	55.8	16	37.2	3	7.0
Does Not Possess	1	50.0	1	50.0	0	0.0
TOTAL	184	70.0	58	22.1	21	8.0
$x^2 = 7.88^a$; df = 2; $p < .02$						

[a]"Somewhat Possesses" and "Does Not Possess" categories were combined to compute the chi square statistic due to some small cell sizes.

Months of Operation

When the months that courses operated were compared with the descriptor totals, several significant relationships were found. These analyses are displayed in Table 25. There is a highly significant difference between the levels of the descriptors and courses operating all year. The availability of full-time staff operating all year to develop or improve courses may be a consideration. However, another explanation may be that the concepts related to competency-based instruction such as open entry/open exit and individualization are especially compatible with the year-round school concept. There are also significant differences between descriptor total levels and certain months of the year. However, there appears to be no discernable pattern to these results.

Table 25

Comparison of Months During Which Courses Operate and Descriptor Total Scores (n=277)

Month(s) Offered	Descriptor Total Score Categories						x^2	df	p
	Definitely Possesses (1)		Somewhat Possesses (2)		Does Not Possess (3)				
	n	%	n	%	n	%			
All Year	136[a]	59.6	15	31.9	0	0.0	13.71[b]	1	.001
January	84	36.8	27	57.4	1	50.0	6.90	1	.01
February	89	39.0	24	51.1	0	0.0	1.65	1	.20
March	91	39.9	27	57.4	1	50.0	4.89	1	.05
April	87	38.2	25	53.2	1	50.0	3.71	1	.10
May	83	36.4	26	53.3	1	50.0	5.89	1	.02
June	53	23.2	13	27.7	0	0.0	.24	1	.70
July	30	13.2	7	14.9	2	100.0	.91	1	.50
August	25	11.0	5	10.6	0	0.0	.02	1	.90
September	80	35.1	26	55.3	0	0.0	5.52	1	.02
October	86	37.7	26	55.3	2	100.0	6.28	1	.02
November	86	37.7	27	57.4	0	0.0	5.05	1	.05
December	79	34.6	23	48.9	0	0.0	2.62	1	.20

[a]Scores represent only those "Yes" answers to the items.
[b]Categories (2) and (3) were combined to compute the chi square statistics due to some small cell sizes.

Regression and Canonical Correlation Analyses

Two analyses were performed to determine the degree of relationship between the 19 course descriptors from Section I and the six criterion items from Section III. The first analysis was a linear regression in which the dependent variable (criterion) was the sum of the six criterion items. The independent variables were the 19 course descriptor variables. The second analysis was a canonical correlation analysis which related the six criterion items to the 19 course descriptor variables.

Table 26 shows the correlation of each of the 19 course descriptor variables with the criterion variable, the total of the six criterion items. Descriptor Item 2, "Learners are pre-assessed upon entry to determine learners' skills and objectives to be achieved, rather than all learners covering the same objectives," is the most strongly related with the extent to which a course is competency-based. Thus, courses in which learners are pre-assessed to determine learner skills and objectives to be achieved are more likely to be strongly competency-based than courses in which learners are not pre-assessed. Other descriptors which are somewhat related to the criterion in descending order of strength are:

4. Instruction is segmented into manageable units, each containing related job skills.

12. Each learner is allowed to proceed to subsequent instruction as quickly as performance objectives are attained.

6. Learner performance is recorded as each objective is achieved.

7. Greater emphasis is placed upon exit requirements (proficiency) than upon entrance requirements.

9. Student assessment criteria are based upon competencies (i.e., criterion-referenced testing is used).

All 19 descriptors were positively related to the criterion, indicating that for all the course descriptor items, a course which has the characteristic described by the item is more likely to be competency-based than one which does not have the characteristic. It must be remembered, however, that all but a few of the relationships are very weak. The low correlations are due in part to the discrepancy between the relatively high ratings of courses by respondents in Section I and the more moderate weights assigned by project staff to open-ended responses in Section III.

When all 19 course descriptor variables are included in a regression equation predicting the extent to which a course is competency-based, 14 percent of the variation in the extent to which a course is competency-based can be explained by the course descriptor variables. This leaves 86 percent of the variance to be explained by other variables which were not included in the equation, including respondent error (e.g., over rating). These data indicate that the relationship is not strong although it is statistically significant. Items 2, 4 and 12 are most responsible for the relationship since a regression equation including only those three variables accounts for 10 percent of the variation in the competency-based total.

The standardized regression coefficients are also shown in Table 26. In general, the variables which are most strongly correlated with the criterion have the largest coefficients. Since all the variables are positively correlated with the criterion, the negative coefficients are due to the correlations among the predictors rather than inverse relationships with the criterion.

Table 26
Correlations of Ratings on Descriptors with Assigned Weights on Competency-Based Criteria

	Descriptors from Section I	Criteria from Section III: Methods for Identification of Tasks (1)	Development of Performance Objectives (2)	Instructional Delivery (3)	Student Testing Procedures (4)	Course Evaluation (5)	Support System (6)	TOTAL SCORE	Standardized Reg. Coef.
1.	Learners are held responsible for meeting stated performance objectives		.18**						.11
2.	Learners are pre-assessed upon entry to determine learners' skills and objectives to be achieved, rather than all learners covering the same objectives			.24**			.24**	.21**	.17
3.	Learners know the measures for which they are held accountable		.15*						-.06
4.	Instruction is segmented into manageable units, each containing related job skills	.23**	.14*				.15*	.19**	.19
5.	Learners are responsible for achieving the competencies as opposed to clock hours of attendance			.17**	.15*				.03
6.	Learner performance is recorded as each objective is achieved			.17**	.14*			.17**	.08
7.	Greater emphasis is placed upon exit requirements (proficiency) than upon entrance requirements			.17**			.14*	.17**	.09
8.	Competencies are derived from a task or job analysis of the particular job	.21**	.18**						-.03
9.	Student assessment criteria are based upon competencies (i.e., criterion-referenced testing is used)		.14*			.17**		.13*	.03
10.	Continuous evaluation and feedback to the learner is provided								-.01
11.	Individual learner competence is determined by individual learner performance								-.11
12.	Each learner is allowed to proceed to subsequent instruction as quickly as performance objectives are attained			.16**	.23**	.13*		.18**	.14
13.	Instruction offers learning alternatives for learners (i.e., different approaches)								-.01
14.	Instruction specifies media to be used to accomplish objectives								-.01
15.	If a learner does not achieve a learning task, a different method of instruction is provided or suggested								.06
16.	Objectives describe the conditions under which the learner will be expected to demonstrate the level of competency								-.01
17.	Objectives describe the level of competency or standards (set by business or industry) to be demonstrated				.16*	.19**			-.01
18.	Objectives describe the tasks to be learned	.14*							.06
19.	Objectives are structured in a sequential order or in order of task difficulty								-.08

[a]Non-significant correlations were not reported. Pearson r reported with df = 243.

*$p < .05$

**$p < .01$

In summary, there is a relatively weak relationship between the course descriptor variables and the extent to which a *course is competency-based. Items most strongly related to the criterion* are:

2. Learners are pre-assessed to determine skills and objectives.

4. Instruction is segmented into manageable units.

12. Each learner is allowed to proceed as soon as objectives are attained.

In the canonical correlation analysis, all six competency-based criterion variables serve as criteria or dependent variables. As in the regression analysis, the 19 course descriptors are the independent variables. The eigenvalues, canonical correlations, and chi square tests of significance are shown in Table 27. These data show that there is only one significant dimension in this relationship. The canonical correlation equals .51. This is the correlation between two new composite (canonical) variables, one comprised of the 19 descriptors and the other comprised of the six criterion questions. These two variables were formed to make as strong a relationship as possible between the two sets of variables.

Table 27

Canonical Correlations and Tests of Significance

Step	Eigenvalue	Canonical Correlation	x^2	df	p
1	.26	.51	130.7	90	.003
2	.24	.49	66.6	68	.525
3	.12	.35	36.5	48	.888
4	.10	.31	12.6	30	.998
5	.03	.18	5.2	14	.983
6	.02	.15	–	–	–

To interpret this relationship, a number of correlation coefficients were computed. Each descriptor variable was correlated with the composite variable formed from the 19 descriptor variables, and each criterion variable was correlated with the composite variable formed from the six criterion variables. If a correlation is relatively high (>.3), the variable is important in the relationship between the descriptor and criterion variables. These correlations, called the factor structure, are shown in Table 28 for the one significant dimension in the relationship.

A profile of competency-based courses can be described from the correlations in Table 28. These correlations indicate that the strongest relationship between the two sets of variables is characterized by courses which are competency-based in:

Table 28

Correlation of Original Variables with Canonical Variable

	Descriptors	Factor Structure Correlations		Criterion Questions	Factor Structure Correlations
1.	Learners are held responsible for meeting stated performance objectives	.25	1.	How were tasks identified in the job analysis?	-.10
2.	Learners are pre-assessed upon entry to determine learners' skills and objectives to be achieved, rather than all learners covering the same objectives	.40	2.	How were performance objectives developed and validated?	.06
3.	Learners know the measures for which they are held accountable	.01	3.	How is instruction delivered?	.84
4.	Instruction is segmented into manageable units, each containing related job skills	-.10	4.	What is the nature of student testing?	.49
5.	Learners are responsible for achieving the competencies as opposed to clock hours of attendance	.36	5.	What is the nature of course evaluation?	.37
6.	Learner performance is recorded as each objective is achieved	.34	6.	What is the nature of the support system of your instruction?	.13
7.	Greater emphasis is placed upon exit requirements (proficiency) than upon entrance requirements	.25			
8.	Competencies are derived from a task or job analysis of the particular job	-.31			
9.	Student assessment criteria are based upon competencies (i.e., criterion-referenced testing is used)	.14			
10.	Continuous evaluation and feedback to the learner is provided	.17			
11.	Individual learner competence is determined by individual learner performance	.13			
12.	Each learner is allowed to proceed to subsequent instruction as quickly as performance objectives are attained	.65			
13.	Instruction offers learning alternatives for learners (i.e., different approaches)	.14			
14.	Instruction specifies media to be used to accomplish objectives	-.20			
15.	If a learner does not achieve a learning task, a different method of instruction is provided or suggested	.24			
16.	Objectives describe the conditions under which the learner will be expected to demonstrate the level of competency	-.10			
17.	Objectives describe the level of competency or standards (set by business or industry) to be demonstrated	.28			
18.	Objectives describe the tasks to be learned	-.16			
19.	Objectives are structured in a sequential order or in order of task difficulty	-.08			

- The way instruction is delivered (e.g., via modules, open entry/open exit).
- The nature of student testing (i.e., use of criterion–referenced testing).
- The nature of course evaluation (especially, continuous monitoring of learner performance and systematic follow-up of course completers).
- Allowing learners to proceed as quickly as performance objectives are attained.
- Pre-assessing learners upon entry to determine their skills and objectives to be achieved.
- Requiring achievement of competencies rather than clock hours of attendance.
- Recording learner performance as each objective is achieved.
- *Not* deriving competencies from a task or job analysis.

The negative relationship indicated for this latter item is probably due to the more common use of advisory councils to derive competencies, rather than the use of a formal task or job analysis. Nearly all respondents who presented evidence of using a task or job analysis to derive competencies were using V-TECS catalogs. These catalogs were explained in Chapter I of this report.

Thus, the canonical correlation analysis shows that three of the six competency-based criterion variables were most important in the relationship between the two sets of variables. The course descriptor variables which were important in the linear regression were, for the most part, the ones which were important in the relationship described by the canonical correlation.

In drawing conclusions from these results it must be remembered that only courses which respondents considered to be competency-based were included in the sample. If courses not considered competency-based had also been included, the relationship would probably have been stronger, and different variables may have proved important in describing the relationship.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The major question investigated in this survey was: What are the characteristics of specific competency-based adult vocational programs in both the public and private sectors? Some valuable information regarding these characteristics was delineated in Chapter III.

Before presenting specific conclusions and recommendations, it may be helpful to summarize the findings of the survey. Following the summary of findings, conclusions and recommendations will be presented.

Summary of Findings

Questionnaires were sent to 1,657 potential respondents and, after a mail follow-up and a telephone follow-up, 277 usable returns were received. Approximately 72 percent of the returns were from the public sector and 28 percent from the private sector. A majority of the responses of the private sector were from proprietary schools.

Demographic Characteristics

A majority (53 percent) of the competency-based adult vocational courses identified were in the trade and industrial education area. Approximately 22 percent of the courses were in the business and office education area, and almost 12 percent were in the health occupations area. Very small percentages of the courses were found in distributive education, home economics, and agricultural education. Most courses were reported as being in the vicinity of 140-180 hours in length, while 80 of the respondents (29 percent) reported that their programs were completely open entry/open exit. Over half of the courses were offered all year.

The median number of job competencies (tasks) identified for courses was reported to be approximately 31, and approximately 23 was the median number of terminal performance objectives reported, based upon competencies identified for the courses.

The majority of the adult vocational courses reported had both female and male enrollments. The median number of females enrolled was approximately 16, and the median number of males enrolled was approximately 22.

Advisory councils were reported in use by 69 percent of the respondents; 60 percent reported that placement programs were being used; and 70 percent reported that they employ a follow-up system for course completers. The predominant types of members on advisory committees consisted of industry representatives, business representatives, school officials, and community leaders, in that order.

Regarding facilities in which courses were offered, approximately 16 percent were offered in proprietary schools, over 15 percent were offered in both adult skill centers and in public technical institutes, over 12 percent were offered in public secondary schools, and over 11 percent were offered in junior or community colleges. Business and industry combined offered over 12 percent of the courses reported.

Problems and Ideas for Improvement

Respondents mentioned a number of problems they had experienced in developing and operating competency-based courses. Learner problems, namely, low ability and lack of qualifications, were most frequently mentioned. Keeping the curriculum up-to-date was the next most common problem, followed by administrative and organizational difficulties. The ideas most commonly given by respondents for improving their competency-based courses dealt with curriculum and program revision, updating materials and equipment, and improved staff preparation.

Course Descriptors

Regarding the 19 descriptors of competency-based courses, there were seven descriptors which were "definitely possessed" by a relatively large number of respondents' courses. Inspection of those seven descriptors suggested that they may be relatively easier to implement or to claim as a course attribute than several of the other descriptors. The other descriptors that may be viewed as more unique to competency-based instruction were "definitely possessed" by a relatively small percentage of courses. These more unique items dealt with (1) pre-assessment of learners upon entry to determine their skills and objectives to be achieved, rather than all learners covering the same objectives, (2) instruction offering learning alternatives for learners—different approaches, and (3) providing or suggesting a different method of instruction if a learner does not achieve a learning task. The above items appear crucial to most competency-based instruction since they represent a high degree of individualization of instruction, based on student capabilities, needs, and learning styles. The findings suggest that many respondents are operating courses which are not completely competency-based.

Open-Ended Questions

The six open-ended criterion questions for competency-based adult vocational instruction revealed that student testing was the area of greatest strength among the courses. However, considering all responses as a group, courses were not exceptionally strong on any of the six questions. Based on the weights assigned by project staff to these open-ended responses, 42 percent of the courses were rated as "strong," over 44 percent were rated as "moderate," and almost 14 percent were rated as "weak" in terms of evidence presented to document the degree to which courses were competency-based.

Overall, respondents rated their courses on the 19 descriptors much higher than the project staff weighted the six open-ended responses. Further, evidence provided by the respondents for the open-ended questions frequently contradicted or failed to support the ratings claimed by respondents on many of the 19 descriptors. Social desirability may have been operating as respondents rated their courses. Some respondents perhaps did not know the meaning of competency-based instruction.

Comparison of Public and Private Sectors

Advisory councils were in use with over 75 percent of the courses reported from the public sector and in almost half of the courses reported from the private sector. The sectors were

significantly different on this variable. Advisory councils in the private sector are apparently used primarily for content input. Also, the public sector made greater use of a wider variety of members than was true in the private sector.

Somewhat surprisingly, the private sector and public sector made almost equal use of both placement programs and follow-up programs. This may have been due to the relatively large proportion of proprietary schools in the private sector, which could have tended to equalize differences between the sectors. That is, proprietary schools may operate their courses more like public institutions that do business, industry and labor training establishments.

The hours required to complete courses were similar between sectors except for the minimum hourly requirements in the public sector, which were significantly less than in the private sector. Almost three-fourths of the courses in the private sector were offered year-round, whereas less than half of the courses in the public sector were offered year-round. This difference was highly significant statistically. Further, year-round operation was associated with relatively strong competency-based adult vocational instruction in both sectors.

The public and private sectors differed significantly on three of the descriptors. One descriptor concerned flexible scheduling and the other two concerned provision of alternative learning approaches. On each of the three descriptors, the private sector was less likely to possess the descriptor than the public sector. It appears that the public sector is more in the forefront on these concepts than trainers in the private sector. Regarding differences in responses to the six open-ended criterion questions, one significant difference was found. Public sector respondents received significantly stronger ratings on the question regarding instructional delivery. Respondents in the private sector indicated less flexibility in operating open entry/open exit programs, thus reducing the options available to learners. The consistency of findings reported in this paragraph are noteworthy.

Descriptor Comparisons with Other Variables

Courses which definitely possessed high proportions of the 19 descriptors were more likely to have an active advisory council than courses possessing the descriptors to a lesser extent. This finding is not surprising since advisory councils frequently are involved in implementing the concepts underlying the competency-based descriptors. Further, competency-based courses which are rated high on the descriptors also tend to have a larger proportion of business and industry members on their advisory councils. Also, in the private sector, the use of proprietary school officials on advisory councils is associated with courses which definitely possess the 19 descriptors.

Courses which were rated high on the descriptors also tended to have placement and follow-up activities. Stronger competency-based courses tend to possess these elements.

Courses which definitely possess the 19 descriptors also have a strong tendency to be in operation year-round. Competency-based concepts of open entry/open exit and individualization of instruction are especially compatible with year-round schools.

Regression Analysis and Canonical Correlation

A linear regression was performed in which the 19 course descriptors were the independent variables and the sum of six weights on the open-ended questions the dependent (criterion) variable. The descriptors which were most related to the criterion, in descending order of strength, were:

- Learners are pre-assessed upon entry to determine learners' skills and objectives to be achieved, rather than all learners covering the same objectives;
- Instruction is segmented into manageable units, each containing related job skills;
- Each learner is allowed to proceed to subsequent instruction as quickly as performance objectives are attained;
- Learner performance is recorded as each objective is achieved;
- Greater emphasis is placed upon exit requirements (proficiency) than upon entrance requirements; and
- Student assessment criteria are based upon competencies (i.e., criterion-referenced testing is used).

However, all of these relationships were relatively weak. The 19 descriptors accounted for 14 percent of the variance in the criterion, leaving 86 percent of the variance unexplained. It is believed that respondent error (e.g., over rating) was in part responsible for the unexplained variance.

The canonical correlation analysis indicated that courses which are competency-based in their means of delivering instruction and by the nature of student testing and course evaluation, are also characterized by allowing learners to proceed as quickly as objectives are attained, pre-assessing learners upon entry, not requiring clock hours of attendance, and recording learner performance as each objective is achieved, but *not* deriving competencies from a task or job analysis. For the most part, course descriptors which were important in the linear regression were also important in the canonical correlation analysis. In drawing conclusions from these results, one must remember that only courses considered to be competency-based were reported. If courses not considered competency-based had also been included, the relationship would probably have been stronger. Thus, the select nature of the sample tended to restrict the range of variability.

Conclusions

Conclusions will now be presented based upon the findings previously reported. The conclusions are as follows:

1. Relatively few high quality competency-based adult vocational education programs exist. There are a few excellent examples which were identified in the national survey, but compared to the overall scope of adult vocational education, competency-based courses are minuscule. Since only 60 of the 277 responses were judged adequate for inclusion in the *National Directory*, this conclusion seems particularly well documented.

2. Regarding the types of courses identified, competency-based courses for adults in distributive education, home economics, and agricultural education are almost non-existent compared to the number identified in the trade and industrial education area.

3. Far too many of the courses reported in the survey (71 percent) operate on schedules in which time is held constant; in these instances performance must have a wide range of acceptability for adult learners. Fewer than one-third of the competency-based courses reported possess the open entry/open exit feature in which performance is held constant and time is varied.

4. Relatively strong competency-based adult vocational instruction is associated with the use of advisory councils, placement programs, follow-up programs, and year-round operation. These features seem to be indicators of program quality.

5. Persons who operate competency-based adult vocational courses need assistance in coping with divergent student populations, keeping curricula up-to-date, and management of administrative and organizational concerns according to perceptions of respondents.

6. Among the 19 competency-based course descriptors, the various analyses performed suggest that the following descriptors are especially important in effective competency-based adult vocational instruction:

   - Learners are pre-assessed upon entry to determine learners' skills and objectives to be achieved, rather than all learners covering the same objectives.
   - Instruction is segmented into manageable units, each containing related job skills.
   - Each learner is allowed to proceed to subsequent instruction as quickly as performance objectives are attained.
   - Instruction offers learning alternatives for learners (i.e., different approaches).
   - If a learner does not achieve a learning task, a different method of instruction is provided or suggested.
   - Learner performance is recorded as each objective is achieved.
   - Greater emphasis is placed upon exit requirements (proficiency) than upon entrance requirements.
   - Student assessment criteria are based upon competencies (i.e., criterion-referenced testing is used).

   These items were most frequently assigned course ratings of does not possess, unusable, or not applicable. Thus, only the strongest competency-based adult vocational courses possessed these descriptors to a substantial degree.

7. Evidence provided in response to the open-ended questions suggests that criterion-referenced testing, or at least some type of performance testing, is in use by most respondents.

8. Public sector competency-based adult vocational programs appear superior to private sector programs in the following areas:

   - Use of advisory councils
   - Diversity of advisory council input
   - Possession of the following course descriptors:

     a. Each learner is allowed to proceed to subsequent instruction as quickly as performance objectives are attained.

b. Instruction offers learning alternatives for learners (i.e., different approaches).

c. If a learner does not achieve a learning task, a different method of instruction is provided or suggested.

- Instructional delivery via modules, open entry/open exit, and so on.

However, as has been discussed, the need for advisory council inputs in private sector instruction is probably less than in the public sector.

9. Private sector competency-based adult vocational programs are superior to public sector programs in year-round operation by an approximate 75 percent to 50 percent margin. However, the finding that almost half of the competency-based adult vocational courses in the public sector are offered year-round is a positive indicator.

Recommendations

Recommendations will be presented here based upon the evidence and conclusions presented in this report. The recommendations are:

1. A large scale effort to disseminate information on the state-of-the-art in the most exemplary competency-based courses identified in this survey should be initiated by professionals and their professional associations. Federal support would be highly desirable. However, state and local leaders, educators and trainers, and associations should not wait for someone else to take the initiative in this effort. Site visits, materials exchanges, in-service workshops, and various types of consultation and technical assistance need to be provided to enhance the rate of acceptance of competency-based concepts in adult vocational education.

2. Leaders in distributive education, home economics, and agricultural education need to make a special effort to initiate competency-based demonstration programs to a level at least comparable in size to that in trade and industrial education. However, on a national scale, there needs to be a dramatic increase in the number of competency-based courses in all major occupational areas. Models have been identified in this project which can serve as guides to implementation of this recommendation to enhance the delivery systems in adult vocational instruction.

3. Greater emphasis must be placed on the development of open entry/open exit competency-based adult courses. It has been demonstrated from evidence in this study that the open entry/open exit concept can be applied in virtually all institutional settings.

4. Leaders in adult vocational education should continue to emphasize and implement the concepts of advisory councils, placement programs, follow-up programs, and year-round program operation as means of enhancing the quality of competency-based courses.

5. Varied in-service staff activities need to be designed to assist instructors with handling student diversity, updating curricula, and overcoming administrative and organizational constraints in the operation of competency-based adult vocational courses. Assistance should also be provided in these areas by paraprofessional aides, curriculum developers, and state and local administrators.

6. In order to strengthen existing competency based adult vocational instruction and to effectively implement new courses, special attention should be given to (a) pre-assessment of learners upon entry, (b) allowing learners to progress as soon as competencies are achieved rather than basing instruction upon clock hours, (c) providing learning alternatives to accommodate various learning styles, and (d) evaluating students on their ability to perform specified objectives which describe the conditions and standards of performance.

7. Trainers in the private sector should look to the public sector for leadership in the planning and operation of competency-based adult vocational instruction. This is particularly true for trainers in business, industry and labor, since proprietary schools appear similar to the public sector with regard to competency-based instruction. This recommendation may be hard to accept for professionals in both sectors, but it is supported by data obtained in the national survey.

8. Adult vocational educators in the public sector need to place greater emphasis on the implementation of year-round competency-based instruction for adults as is being done in the private sector. The benefits of greater program flexibility, effective implementation of open entry/open exit concepts, and more varied schedules to meet the unique requirements of the adult population would ensue. Beyond these instructional advantages, facility utilization would be increased and more adults could be served each year. Implementation of this recommendation would be an important means of demonstrating accountability to the public, and should foster increased public support.

9. Further research needs to be conducted in which all types of courses, competency-based and others which are not, would be rated on the 19 course descriptors employed in this study. Such a study could more effectively determine which course descriptors are essential for strong competency-based courses to exist, using multivariate techniques such as canonical correlation.

10. Further research should also attempt to improve the precision with which many terms related to competency-based instruction are commonly used.

APPENDIX A

Initial Letter Sent to the Public Sector
Requesting Nominees

THE CENTER FOR VOCATIONAL EDUCATION
The Ohio State University • 1960 Kenny Road • Columbus, Ohio 43210
Tel: (614) 486-3655 Cable: CTVOCEDOSU/Columbus, Ohio

The Center for Vocational Education has a grant from the U. S. Office of Education, Bureau of Occupational and Adult Education, to conduct a study of "Competency-Based Adult Vocational Education Programs" now in progress in the United States. The goal of this project is threefold:

1) To conduct a study of the characteristics of competency-based adult vocational programs,
2) To develop a directory of such programs in the United States for the use of interested professionals, and
3) To conduct a national dissemination workshop through which programs and concepts of competency-based adult vocational education could be shared and exchanged, allowing developers of adult vocational programs to be further trained in the competency-based concept.

The purpose of this letter is to solicit from you the names of professionals in your state who are involved with competency-based adult vocational programs, either in public education, other government agencies, or business/industry. The reasons for compiling a list of adult educators who operate competency-based programs is to identify people with whom we would communicate to gather specific information on competency-based programs, and also to identify possible consultants to the project. A form is enclosed which may be helpful to you in providing this information. A post-paid envelope is also enclosed.

Thank you very much for your attention to this request. We look forward to hearing from you in the next few days as we identify the target group to be served by the project.

Sincerely,

Earl B. Russell
Project Director

EBR:mdm
Enclosures (2)

CONTACT PERSONS FOR
COMPETENCY-BASED ADULT VOCATIONAL EDUCATION PROGRAMS
IN PUBLIC SCHOOLS, OTHER GOVERNMENTAL AGENCIES, OR BUSINESS/INDUSTRY

NAME: _____
AGENCY: _____
ADDRESS: _____
_____
_____
TELEPHONE: _____

NAME: _____
AGENCY: _____
ADDRESS: _____
_____
_____
TELEPHONE: _____

NAME: _____
AGENCY: _____
ADDRESS: _____
_____
_____
TELEPHONE: _____

NAME: _____
AGENCY: _____
ADDRESS: _____
_____
_____
TELEPHONE: _____

NAME: _____
AGENCY: _____
ADDRESS: _____
_____
_____
TELEPHONE: _____

NAME: _____
AGENCY: _____
ADDRESS: _____
_____
_____
TELEPHONE: _____

NAME: _____
AGENCY: _____
ADDRESS: _____
_____
_____
TELEPHONE: _____

NAME: _____
AGENCY: _____
ADDRESS: _____
_____
_____
TELEPHONE: _____

ATTACH EXTRA PAGES IF NECESSARY

APPENDIX B

Centergram Project Announcement

CENTERGRAM

Volume XI, No. 12 December 1976

IDENTIFICATION AND ANALYSIS OF COMPETENCY-BASED ADULT VOCATIONAL EDUCATION PROGRAMS

Relatively little is known about the status of competency-based programs of adult vocational education in the United States. Judging by differences in terminology and the degree of reporting about specific competency-based programs, it is apparent that communications among the various teachers and trainers of adults is limited. However, education, business, industry, and government agencies appear to be increasing their efforts in the competency-based approach to learning and training.

Recognizing the need for improved adult vocational education programs, the U.S. Office of Education, Bureau of Occupational and Adult Education, is sponsoring a twelve-month project at The Center entitled, "Identification and Analysis of Competency-Based Adult Vocational Education Programs." The purpose of this project is to assemble information on competency-based programs for adult learners in public and private vocational education and to disseminate that information to developers of adult vocational education programs. In particular, this study will: (1) identify and describe characteristics of specific competency-based adult vocational education programs in public and private vocational education; (2) provide the profession with information and supporting data on the status of competency based adult vocational education programs sponsored by business, industry, and education so that developers and operators will have a readily available source of assistance; and (3) conduct a national dissemination workshop through which programs and concepts of competency-based adult vocational education could be shared and exchanged, allowing developers of adult vocational programs to be further trained in the competency-based concept.

Working with a panel of consultants, project staff will develop a set of criteria for selecting competency-based adult vocational programs for study. Concurrently, a list of agencies involved in such programs will be compiled from the literature and individual referrals. Key administrators in each of the identified agencies will be asked to provide nominations of individuals or specific agencies which should be contacted regarding their involvement with competency-based adult vocational education programs. The criteria applied to selection of competency-based programs at this stage is viewed as a critical aspect of the project. Subsequently, a mail survey of competency-based programs for adults will be conducted among persons who were identified as operating these programs. Approximately ten programs will be selected for on-site review. Based upon the findings of the survey, descriptive analyses of surveyed programs will be presented in a technical report and in a program directory. To disseminate this information, a workshop will be conducted for adult vocational education program developers.

Four different documents will be outputs of the project. The first will be a directory of competency-based adult vocational education programs. This directory will be the first of its kind and will be valuable to program developers and operators as well as program students. The second will be a technical report of the survey program characteristics and will serve as a major input to the workshop. Third, the workshop proceedings will be prepared and distributed to participants, other interested individuals, and major information systems in the nation. Lastly, a final report will be prepared.

Expected outcomes from these products include: (1) improved access to competency-based adult vocational programs by program developers and subsequently adult learners; (2) improved information regarding the status of and the methods in competency-based adult vocational education; and (3) specific plans of action for program improvement by workshop participants.

Persons who know about specific competency-based vocational programs for adults are asked to contact Earl B. Russell, project director at The Center, (614) 486-3655.

A publication of The Center for Vocational Education
The Ohio State University, 1960 Kenny Road, Columbus, Ohio 43210

APPENDIX C

Project Announcement Sent to Professional Journals and Newsletters

November 1976

ANNOUNCEMENT

COMPETENCY-BASED PROGRAMS FOR ADULTS?

A 12-month project titled, "Identification and Analysis of Competency-Based Adult Vocational Education Programs," has just begun at The Center for Vocational Education. The purpose of this project, funded by the U. S. Office of Education, Bureau of Occupational and Adult Education, is to assemble information on competency-based programs for adult learners in education, business/industry, and government agencies.

Major project efforts will be to survey such programs, prepare a national program directory, and conduct a workshop to disseminate project findings to program developers and operators. Persons who know about specific competency-based vocational programs for adults are asked to pass such information along to Earl Russell, Project Director, at The Center for Vocational Education, The Ohio State University, 1960 Kenny Road, Columbus, Ohio 43210. The phone number there is (614) 486-3655.

APPENDIX D

Letter Sent to ASTD Membership Sample and the *Fortune* 500 Sample

THE CENTER FOR VOCATIONAL EDUCATION
The Ohio State University • 1960 Kenny Road • Columbus, Ohio 43210
Tel: (614) 486-3655 Cable: CTVOCEDOSU/Columbus, Ohio

The Center for Vocational Education has a grant from the U. S. Office of Education, Bureau of Occupational and Adult Education, to conduct a study of Competency-Based Adult Training and Development Programs now in progress in the United States. The goal of this project is threefold:

1) To conduct a study of the characteristics of competency-based adult training and development programs,
2) To develop a directory of such programs in the United States for the use of interested professionals, and
3) To conduct a national dissemination workshop through which programs and concepts of competency-based adult training and development could be shared and exchanged, allowing developers of such programs in both the private sector and public schools to be further trained in the competency-based concept.

For the purposes of this project we are operationally defining competency-based programs as being comprised of a job/task analysis, performance objectives, individualized instruction, and criterion referenced testing.

The purpose of this letter is to solicit from you the names of professionals you are acquainted with who are involved with competency-based adult training and development programs in business and industry. The reasons for compiling a list of adult trainers who operate or have developed competency-based programs is to identify people with whom we would communicate to gather specific information on competency-based programs, and also to identify possible consultants to the project. A form is enclosed which may be helpful to you in providing this information. A post-paid envelope is also enclosed.

Thank you very much for your attention to this request. We look forward to hearing from you in the next few days as we identify the target group to be served by the project.

Sincerely,

Earl B. Russell
Project Director

EBR:mdm
Enclosures (2)

APPENDIX E

Letter Sent to NTATC and MTAB Membership

THE CENTER FOR VOCATIONAL EDUCATION
The Ohio State University • 1960 Kenny Road • Columbus, Ohio 43210
Tel: (614) 486-3655 Cable: CTVOCEDOSU/Columbus, Ohio

Dear Professional:

I am writing at the suggestion of Hazel Brown, President of the Harry Lundeberg School of Seamanship, regarding a project we have underway. The Center for Vocational Education has a grant to conduct a survey of competency-based adult training and development programs now in operation in the United States. The purpose of this survey is to identify exemplary approaches in this field and share the findings with interested parties. The main result of this effort will be an identification of methods by which instructional content is offered rather than the content itself. It is our belief that labor, business, and industry, as well as the educational sector will benefit from this project through improvement of the work force at less cost and time. For your information, the enclosed brochure contains a more detailed description of our project, an explanation of the products to be developed, and information about the forthcoming National Workshop based on project findings.

From our understanding of your organization, we suspect that perhaps one or more of the training efforts under your control are competency-based. Competency-based instruction is being operationally defined as possessing such features as clearly stated performance objectives based upon job or task analysis, individualized instruction, and criterion-referenced (objectives-based) testing. A glossary of key terms used in the survey is enclosed for your reference.

If you administer the training activities conducted by your staff, we would appreciate your asking a staff member who is practicing competency-based training to participate in this research. Please select a course you feel is particularly EXEMPLARY of competency-based instruction.

Your participation in this effort will result in the identification of competency-based adult vocational instruction, and with your persmission, may place a description of your training in a National Directory that can be used by others to identify contacts for consultation or information exchanges relative to competency-based instruction.

We appreciate very much your cooperation and participation. A complimentary summary of findings will be made available to all participants.

Sincerely,

Earl B. Russell
Project Director

EBR:mdm
Enclosures

APPENDIX F

Letter Sent to Contacts in the Health Field

THE CENTER FOR VOCATIONAL EDUCATION
The Ohio State University • 1960 Kenny Road • Columbus, Ohio 43210
Tel: (614) 486-3655 Cable: CTVOCEDOSU/Columbus, Ohio

Dear Director:

The Center for Vocational Education has a grant from the U. S. Office of Education, Bureau of Occupational and Adult Education, to conduct a study of Competency-Based Adult Training and Development Programs now in progress in the United States. The goal of this project is threefold:

1) To conduct a study of the characteristics of competency-based adult training and development programs,
2) To develop a National Directory of such programs in the United States for the use of interested professionals, and
3) To conduct a national dissemination workshop through which programs and concepts of competency-based adult training and development could be shared and exchanged, allowing developers of such programs in both the private sector and public schools to be further trained in the competency-based concept.

It is our belief that business, industry and labor, as well as the educational sector, will benefit from this project through improvement of the work force at less cost and time.

For the purposes of this project we are defining competency-based programs as being comprised of a job/task analysis, performance objectives, individualized instruction, and criterion-referenced testing. Adult training and development programs should be of the non-credit, non-degree type.

Marie Piekarski, Coordinator of Program Planning and Development at the University of Kentucky, Community College System suggested your organization as a source of information about adult education and training programs in the health areas. The purpose of this letter is to solicit from you names of persons involved in competency-based instruction at the operational level who we might communicate with to gather further information about their competency-based programs. Three forms and a post-paid envelope are enclosed to help you in providing this information. A "Centergram" article is also enclosed for your review.

Thank you very much for your assistance. We look forward to hearing from you in the next few days as we are getting our survey underway.

Sincerely,

Earl B. Russell
Project Director

EBR:mdm

Enclosures

APPENDIX G

Letter Requesting Local School Nominees

THE CENTER FOR VOCATIONAL EDUCATION
The Ohio State University • 1960 Kenny Road • Columbus, Ohio 43210
Tel: (614) 486-3655 Cable: CTVOCEDOSU/Columbus, Ohio

We need your assistance in identifying a select group of local vocational education personnel either in secondary or postsecondary schools. The Center for Vocational Education has a grant from the U.S. Office of Education, Bureau of Occupational and Adult Education, to conduct a study of "Competency-Based Adult Vocational Education Programs" now in progress in the United States. The goal of this project is threefold:

1) To conduct a study of the characteristics of competency-based adult vocational programs,
2) To develop a directory of such programs in the United States for the use of interested professionals, and
3) To conduct a national dissemination workshop through which programs and concepts of competency-based adult vocational education could be shared and exchanged, allowing developers of adult vocational programs to be further trained in the competency-based concept.

For the purposes of this project we are operationally defining competency-based programs as being comprised of a job/task analysis, performance objectives, individualized instruction, and criterion-referenced testing. Adult vocational programs should be of the non-credit, non-degree type.

The purpose of this letter is to solicit from you the names of vocational teachers or administrators in local schools in your state who are conducting competency-based adult vocational programs. The reason for compiling a list of local adult educators who operate competency-based programs is to identify people with whom we would communicate to gather specific information on competency-based programs. A form is enclosed which may be helpful to you in providing this information. A post-paid envelope is also enclosed.

Thank you very much for your attention to this request. We look forward to hearing from you in the next few days as we identify the target group to be contacted by the project.

Sincerely,

Earl B. Russell
Project Director

EBR:mdm
Enclosures (2)

LOCAL SCHOOL CONTACT PERSONS FOR
COMPETENCY-BASED ADULT VOCATIONAL EDUCATION PROGRAMS

NAME: _____
AGENCY: _____
ADDRESS: _____
_____
_____
TELEPHONE: _____

NAME: _____
AGENCY: _____
ADDRESS: _____
_____
_____
TELEPHONE: _____

NAME: _____
AGENCY: _____
ADDRESS: _____
_____
_____
TELEPHONE: _____

NAME: _____
AGENCY: _____
ADDRESS: _____
_____
_____
TELEPHONE: _____

NAME: _____
AGENCY: _____
ADDRESS: _____
_____
_____
TELEPHONE: _____

NAME: _____
AGENCY: _____
ADDRESS: _____
_____
_____
TELEPHONE: _____

NAME: _____
AGENCY: _____
ADDRESS: _____
_____
_____
TELEPHONE: _____

NAME: _____
AGENCY: _____
ADDRESS: _____
_____
_____
TELEPHONE: _____

ATTACH EXTRA PAGES IF NECESSARY

APPENDIX H

Letter Sent to School Administrators

THE CENTER FOR VOCATIONAL EDUCATION
The Ohio State University • 1960 Kenny Road • Columbus, Ohio 43210
Tel: (614) 486-3655 Cable: CTVOCEDOSU/Columbus, Ohio

The Center for Vocational Education has received a grant from the U. S. Office of Education, Bureau of Occupational and Adult Education, to conduct a study of "Competency-Based Adult Vocational Education Programs" now in progress in the United States. The purpose of this project is threefold:

1) To conduct a study of the characteristics of competency-based adult vocational instruction,
2) To develop a National Directory of such instruction in the United States for the use of interested professionals, and
3) To conduct a national dissemination workshop through which the state of the art in competency-based adult vocational education could be shared and exchanged.

It has been suggested to us that a course or courses under your direction are "competency-based" adult vocational education or training. We are defining competency-based instruction as having clearly stated performance objectives based upon a job or task analysis, individualized instruction, and criterion-referenced (objectives-based) testing.

We would, at this time, like to know if you would be interested in participating in this study and having your courses included in the National Directory. If so, we will send you sufficient copies of a survey form to be completed by your instructors who teach adult competency-based classes. Would you kindly take a moment to fill out the enclosed postage-paid postcard and return it to us as soon as possible with the information requested?

Your participation in this study will result in the identification of competency-based adult vocational instruction, and may add, with your permission, courses from your institution to the National Directory as a contact point for consulting and information exchanges relative to competency-based instruction.

We appreciate your cooperation and participation. A complimentary summary of findings will be made available to all participants.

Sincerely,

Earl B. Russell
Project Director

EBR:mdm
Enclosure

NAME: _____

TITLE: _____

ADDRESS: _____

_____ TELEPHONE: _____

I consider ours a Competency-Based Adult Vocational Education or Training Program and would like to participate in the project. ____

I am not sure if ours is a Competency-Based Adult Vocational Education or Training Program but would still like to participate in the project. ____

I do not consider ours a Competency-Based Adult Vocational Education or Training Program and feel that it would be inappropriate for us to participate. ____

HOW MANY TEACHER FORMS WILL YOU NEED? _____

APPENDIX I

Letter Sent to ASTD Chapter Presidents

THE CENTER FOR VOCATIONAL EDUCATION
The Ohio State University • 1960 Kenny Road • Columbus, Ohio 43210
Tel: (614) 486-3655 Cable: CTVOCEDOSU/Columbus, Ohio

Dear ASTD Chapter President:

With the support of the Central Ohio Chapter of ASTD and the cooperation of Chapter President Charles D. W. Thornton, this letter is sent to you as President of your ASTD Chapter. The purpose of this communication is to solicit your assistance with our project.

The Center for Vocational Education has a grant from the U. S. Office of Education, Bureau of Occupational and Adult Education, to conduct a study of competency-based adult training and development programs now in operation in the United States. The goal of this project is threefold:

1) To conduct a study of the characteristics of competency-based adult training and development programs,
2) To develop a National Directory of such programs in the United States, and
3) To conduct a national dissemination workshop through which programs and concepts of competency-based adult training and development could be shared and exchanged.

For more information, please see the attached brochure which has a more detailed description of the project.

For the purposes of this project we are defining competency-based programs as being comprised of a job/task analysis, performance objectives, individualized instruction, and criterion-referenced testing. In addition, these programs should be non-degree and non-credit granting to be included in the survey.

The enclosed survey has been developed to collect the information we need to meet the above stated goal. We would appreciate your bringing this survey, and our project, to the attention of your Chapter membership so that those who wish to respond could do so. We would be happy to supply a few more copies of the survey if more are requested.

Thank you very much for your attention to this request. We look forward to hearing from a representative(s) of your ASTD Chapter.

Sincerely,

Earl B. Russell
Project Director

EBR:mdm
Enclosures

APPENDIX J

National Panel of Consultants

NATIONAL PANEL OF CONSULTANTS TO THE PROJECT,
"IDENTIFICATION AND ANALYSIS OF
COMPETENCY-BASED ADULT VOCATIONAL EDUCATION PROGRAMS"

Name/Title	Organization
Hazel P. Brown President	Harry Lundeberg School of Seamanship Piney Point, Maryland
Ben A. Hirst, Jr. Executive Director	Vocational-Technical Education Consortium of States (V-TECS) Southern Association of Colleges and Schools Atlanta, Georgia
Chester S. Januszewski Project Manager-Functional Planning	Western Electric Company Bell System Training Center (National) Dublin, Ohio
John R Kobe Adult Vocational Director	Suburban Hennepin County Area Vocational- Technical Centers Minneapolis, Minnesota
Marie L. Piekarski Coordinator of Program Planning and Development	Community College System University of Kentucky Lexington, Kentucky
Bernardo R. Sandoval Assistant Director, Manpower Program Development	Los Angeles City Unified School District Los Angeles, California
Lucille E. Wright Educational Specialist	Division of Vocational Education Cleveland State University Cleveland, Ohio

APPENDIX K

Cover Letters for the Data Collection Instrument

THE CENTER FOR VOCATIONAL EDUCATION
The Ohio State University • 1960 Kenny Road • Columbus, Ohio 43210
Tel: (614) 486-3655 Cable: CTVOCEDOSU/Columbus, Ohio

Dear Instructor:

The Center for Vocational Education has a grant from the U. S. Office of Education, Bureau of Occupational and Adult Education, to conduct a study of competency-based adult vocational instruction. This national research is now in progress with selected personnel in education, business/industry, and government agencies.

Leaders in your state and/or your director inform us that you teach a course or courses through the use of competency-based adult vocational instruction. We are operationally defining competency-based instruction as having clearly stated performance objectives based upon a job or task analysis, individualized instruction, and criterion-referenced (objectives-based) testing. The adult vocational instruction we are surveying should be of the non-credit, non-degree type.

The enclosed survey is designed to obtain three types of data:

1) Information on how your course relates to the "textbook" characteristics of competency-based instruction,
2) Descriptive data on your course (i.e., content coverage, enrollment, etc.), and
3) A description of your course for possible inclusion in the National Directory of Competency-Based Adult Vocational Instruction, if you grant us permission.

Your participation in this study will result in the identification of competency-based adult vocational instruction, and may add your course to the National Directory as a contact person for consulting and information exchanges relative to competency-based instruction. Please complete this survey for the MOST EXEMPLARY competency-based course.

The enclosed brochure may be helpful to you when describing this project to your director or other interested persons. A form is provided in the brochure for those interested in attending the National Workshop based upon project findings.

We appreciate your cooperation and participation. A complimentary summary of findings will be made available to all participants.

Sincerely,

Earl B. Russell
Project Director

EBR:mdm
Enclosures

THE CENTER FOR VOCATIONAL EDUCATION
The Ohio State University • 1960 Kenny Road • Columbus, Ohio 43210
Tel: (614) 486-3655 Cable: CTVOCEDOSU/Columbus, Ohio

Dear Professional:

The Center for Vocational Education has a grant to conduct a survey of competency-based adult training and development programs now in operation in the United States. The purpose of this survey is to identify exemplary approaches in this field and share the findings with interested parties. The main result of this effort will be an identification of methods by which instructional content is offered rather than the content itself. It is our belief that business, industry and labor, as well as the educational sector, will benefit from this project through improvement of the work force at less cost and time. For your information, the enclosed brochure contains a more detailed description of our project, an explanation of the products to be developed, and the National Workshop based on project findings.

Training leaders advise us that one or more of the training efforts under your control are competency-based. Competency-based instruction is being operationally defined as possessing such features as clearly stated performance objectives based upon job or task analysis, individualized instruction, and criterion-referenced (objectives-based) testing. A glossary of key terms used in the survey is enclosed for your reference.

If you administer the training activities conducted by your staff, we would appreciate your asking a staff member who is practicing competency-based training to participate in this research. Please select a course you feel is particularly EXEMPLARY of competency-based instruction.

Your participation in this effort will result in the identification of competency-based adult vocational instruction, and with your permission, may place a description of your training in a National Directory that can be used by others to identify contacts for consultation or information exchanges relative to competency-based instruction.

We appreciate very much your cooperation and participation. A complimentary summary of findings will be made available to all participants.

Sincerely,

Earl B. Russell
Project Director

EBR:mdm
Enclosures

APPENDIX L

Glossary of Terms

GLOSSARY

The terms in this glossary are identified in italics in Section I of the Form.
Please READ CAREFULLY before completing the form.

ADULT VOCATIONAL EDUCATION—Instruction for "out-of-school" persons generally above the age of 16 which is designed to prepare or upgrade occupational skills, except programs leading to degrees of any kind.

COMPETENCY—The ability to perform a given task under specified conditions at an acceptable proficiency level.

COMPETENCY-BASED INSTRUCTION—Based upon a job/task analysis, and consisting of elements such as performance objectives, individualized instruction, and criterion-referenced testing.

CONDITIONS—(part of an objective) The particular limits and circumstances of the job environment which will be taken into consideration when the learner's performance is practiced and evaluated.

COURSE—The unit of instruction taught by one instructor or a team of instructors working together.

CRITERION-REFERENCED TESTING—Based upon a performance objective and designed to determine whether or not the learner has accomplished the objective (criterion).

ENTRANCE REQUIREMENTS—Abilities that the learner must possess/exhibit prior to beginning a period of instruction.

EXIT REQUIREMENTS—The specific behavior the learner is to exhibit at the end of a period of instruction and based upon a criterion-referenced measure.

INDIVIDUALIZED INSTRUCTION—Providing learners with opportunities for independent achievement of performance objectives. This ranges from differentiating one learner from another simply by the rate at which a sequence of activities is undertaken and completed to differentiating by providing optional sequences.

JOB ANALYSIS—The process of identifying duties and tasks which comprise workers' responsibility including the collection and analysis of such data.

OPEN ENTRY/OPEN EXIT—Learners can enter or leave the program of instruction at any time or point dependent on the competencies possessed.

PERFORMANCE OBJECTIVE—A statement specifying what learners will be required to do in terms of terminal observable behavior, conditions under which the behavior will be exhibited, and the acceptable level of performance.

STANDARD—The level of the learner's performance which will be deemed minimally acceptable.

TASK—A unit of work activity or operation that constitutes a logical and necessary step in the performance of a duty. It usually consists of two or more steps.

TASK ANALYSIS—The process of analyzing data on tasks identified in a job analysis to aid in determining training requirements.

APPENDIX M

Data Collection Instrument

NATIONAL SURVEY OF COMPETENCY-BASED ADULT VOCATIONAL INSTRUCTION

Instructor Survey

INSTRUCTIONS FOR COMPLETION OF THIS FORM

1. This form should be completed for only ONE course. We realize that you may offer more than one instructional course that would qualify as *competency-based instruction.* However, please select the ONE you believe to be the most EXEMPLARY of *competency-based adult vocational instruction* offered. By exemplary we suggest that you choose the ONE which, in your opinion, is the best working example of *competency-based instruction.* If you wish to describe more than one of your courses, please duplicate this form.

2. The form is divided into three sections. Specific instructions are covered in each section.

3. Please complete Section III even though you may not wish your course to be considered for inclusion in the **National Directory.** There is a space for you to indicate your preference. Information will not be published without your written permission/approval.

4. When completed, please fold in half, staple or tape, and mail.

5. If you would like to be notified when the final report and **National Directory** are made available, please check here. ☐

THANK YOU FOR YOUR COOPERATION IN THIS SURVEY!

THE CENTER FOR VOCATIONAL EDUCATION
THE OHIO STATE UNIVERSITY
1960 Kenny Road · Columbus, Ohio 43210

1	2	3	4	5

SECTION I

The italicized terms in this section are defined in the glossary provided.

The purpose of this section is to collect information about your *course* in terms of the extent to which it relates to *competency-based instructional* features.

If you feel that your instruction can be classified as *competency-based*, please indicate whether the following characteristics are evident in your course. The following items describe *competency-based instruction* by most "textbook" definitions. We do not necessarily expect that your or any other *course* will possess all characteristics to a strong degree.

Please place in the box to the right a **1** if you feel that your *course* of instruction **definitely possesses** the stated characteristic, a **2** if you feel that it **somewhat possesses** the stated characteristic, a **3** if you feel that it **does not possess** the stated characteristic, and a **4** if you feel that the stated characteristic is **unusable or not applicable** in your situation.

1 = definitely possesses	2 = somewhat possesses	3 = does not possess	4 = unusable or not applicable

PLEASE MARK YOUR RESPONSE HERE
(Numbers down margin are for project use only)

COURSE NAME: _____

A. STRUCTURE OF *COURSE*

Learners are held responsible for meeting stated *performance objectives*	☐	6
Learners are pre-assessed upon entry to determine learners skills and objectives to be achieved, rather than all learners covering the same objectives	☐	7
Learners know the measures for which they are held accountable	☐	8
Instruction is segmented into manageable units, each containing related job skills	☐	9
Learners are responsible for achieving the *competencies* as opposed to clock hours of attendance	☐	10
Learner performance is recorded as each objective is achieved	☐	11
Greater emphasis is placed upon *exit requirements* (proficiency) than upon *entrance requirements*	☐	12
Competencies are derived from a *task* or *job analysis* of the particular job	☐	13
Student assessment criteria are based upon competencies (i.e., *criterion-referenced testing* is used)	☐	14
Continuous evaluation and feedback to the learner is provided	☐	15
Individual learner *competence* is determined by individual learner performance	☐	16

1 = definitely possesses	2 = somewhat possesses	3 = does not possess	4 = unusable or not applicable

YOUR RESPONSE HERE
(Numbers down margin are for project use only)

Each learner is allowed to proceed to subsequent instruction as quickly as *performance objectives* are attained ☐ 17

Instruction offers learning alternatives for learners (i.e., different approaches) ☐ 18

Instruction specifies media to be used to accomplish objectives ☐ 19

If a learner does not achieve a learning task, a different method of instruction is provided or suggested ☐ 20

B. TERMINAL PERFORMANCE OBJECTIVES

Objectives describe the *conditions* under which the learner will be expected to demonstrate the level of *competency* ☐ 21

Objectives describe the level of *competency* or *standards* (set by ousiness or industry) to be demonstrated ☐ 22

Objectives describe the *tasks* to be learned ☐ 23

Objectives are st uctured in a sequential order or in order of *task* difficulty ☐ 24

SECTION II

The questions in this section are to collect descriptive information about your course. When responding to the items think in terms of the preceding 12 months for your course. Read each one carefully and respond to the question in the appropriate box to the right. When recording any number please regard th number as a four (4) digit number and record it like this . . .

The number "34" would be recorded as: | 0 | 0 | 3 | 4 |

or

The number "200" would be recorded as: | 0 | 2 | 0 | 0 |

PLEASE MARK YOUR RESPONSE HERE
(Numbers down margin are for project use only)

A. How many hours of instruction are required for a learner to complete your course? (Please state actual number of hours in 1, 2, **AND** 3, OR **ONLY** check 4 if that applies as your response.)

1. Minimum hours ☐☐☐☐ 25-28
2. Average hours ☐☐☐☐ 29-32
3. Maximum hours ☐☐☐☐ 33-36
4. Not applicable, completely open entry/open exit ☐ 37

B. As a result of the analysis of the job, how many competencies (tasks) have been identified for this entire course? [Please state the actual number of competencies (tasks)] ☐☐☐ 38-40

YOUR RESPONSE HERE
(Numbers down margin
are for project use only)

C. How many terminal performance objectives, based upon the competencies (tasks), are included in this course? (Please state the actual number.) ☐☐☐ 41-43

D. What is the approximate total enrollment in your course, by the learner's sex? (Please state approximate numbers)

1. Female ☐☐☐ 44-46
2. Male ☐☐☐ 47-49

E. Does your course have an active advisory council?

1. Yes
2. No ☐ 50

F. If you have an active advisory council, what people are represented? (Please check all that apply)

Union Representatives	Business Reps	Industry Reps	University Reps	College Reps	School Officials
☐ 51	☐ 52	☐ 53	☐ 54	☐ 55	☐ 56

Community Leaders	Private Proprietary School Officials	Others:
☐ 57	☐ 58	☐ 59 _____

G. Do you have a placement program for learners completing your instruction?

1. Yes
2. No
3. Other (please explain) _____ ☐ 60

H. Do you have a system for follow-up of your completers?

1. Yes
2. No
3. Other (please explain) _____ ☐ 61

I. Please check the appropriate box or boxes for the months of the year that your course operates:

ALL YEAR ☐ 62

OR

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
☐ 63	☐ 64	☐ 65	☐ 66	☐ 67	☐ 68	☐ 69	☐ 70	☐ 71	☐ 72	☐ 73	☐ 74

J. Would you please share with us any problems that you might have encountered in developing and operating this competency-based course? (Please attach additional sheet marked with a "J" if necessary.)

_____

_____

_____

K. Would you please share with us any ideas on how your competency-based course can be improved? (Please attach an additional sheet marked with a "K" if necessary.)

_____

_____

_____

A workshop will be held on August 2-5, 1977 to disseminate the findings of the study and to assist participants in developing individualized plans of action for improving their adult vocational instruction. If you would like to be placed on a MAILING LIST of POTENTIAL WORKSHOP PARTICIPANTS, please print your name:

_____

SECTION III

Thank you for your work to this point! This remaining section is extremely important to both this study and the recognition which may be focused on your efforts.

The **National Directory** will be a resource to be used by course developers and operators all over the country. If you give us permission, the detailed description which you submit will be the source for **Directory** users to learn about your instructional activities.

1. On the following two pages is the FORMAT in which the DESCRIPTION of your COURSE would appear, with your permission, if selected to be included in the **National Directory.**

2. Please make your descriptions concise and complete, using a few SENTENCES per category RATHER THAN SINGLE WORDS OR PHRASES.

3. TYPE or PRINT directly on this form or use separate sheets of paper.

4. In either case please use the outline and categories listed.

5. Include all the information you regard as pertinent to adequately describe your competency-based adult vocational course.

6. Please check (✓) this box if you **DO NOT** wish us to publish this information in the **National Directory.** ☐ We will send verification of your wish **NOT** to publish.

DESCRIPTION OF COURSE FOR POSSIBLE INCLUSION
IN THE *NATIONAL DIRECTORY* OF CBAV COURSES
(Please TYPE or PRINT your description on this form or some facsimile)

COURSE TITLE: _____

NAME OF FACILITY AND ADDRESS: _____

_____

_____

CONTACT PERSON: _____ Phone Number ( ) _____

TYPE OF FACILITY IN WHICH COURSE IS OFFERED: (Please check one)

- ☐ Business
- ☐ Industry
- ☐ Union Sponsored
- ☐ Other (Specify) _____
- ☐ Public Secondary
- ☐ Adult Skills Center
- ☐ Public Technical Institute
- ☐ Proprietary School
- ☐ Junior/Community College
- ☐ University

HOW WERE TASKS IDENTIFIED IN THE JOB ANALYSIS? _____

_____

_____

_____

_____

HOW WERE PERFORMANCE OBJECTIVES DEVELOPED AND VALIDATED? _____

_____

_____

_____

HOW IS INSTRUCTION DELIVERED? (For example, via modules, open entry/open exit, or other format)

_____

_____

_____

_____

_____

WHAT IS THE NATURE OF STUDENT TESTING? (For example, describe basis, methods, extent) _____

WHAT IS THE NATURE OF COURSE EVALUATION? (How reviewed, revised, who is involved, etc.) _____

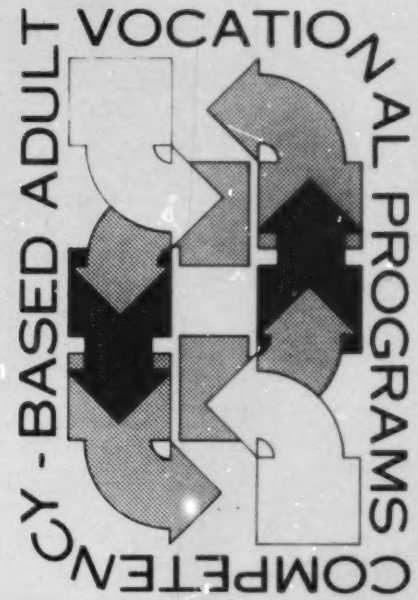
WHAT IS THE NATURE OF THE SUPPORT SYSTEM OF YOUR INSTRUCTION? (i.e., advisory groups, administration, funding base) _____

THANK YOU VERY MUCH FOR YOUR TIME AND ENERGY IN ASSISTING US WITH THIS PROJECT

IF YOU KNOW OF ANY OTHER INSTRUCTOR(S) WHO SHOULD RECEIVE A COPY OF THIS SURVEY, PLEASE SEND US THEIR NAME(S) AND ADDRESS(ES):

NAME: _____
TITLE: _____
AGENCY: _____
ADDRESS: _____
_____
_____
TELEPHONE: _____

NAME: _____
TITLE: _____
AGENCY: _____
ADDRESS: _____
_____
_____
TELEPHONE: _____



please fold along this line and staple or tape together—thank you

Postage Will Be Paid by Addressee

No Postage Stamp Necessary If Mailed in the United States

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 184 COLUMBUS, OHIO

OHIO STATE UNIVERSITY
242 W. 18th AVENUE
COLUMBUS, OHIO 43210

Dr. Earl B. Russell
The Center for Vocational Education
1960 Kenny Road
3030-340227-322A

APPENDIX N

Project Brochure

FIRST CLASS
Permit No. 184
Columbus, Ohio

BUSINESS REPLY MAIL
NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

Postage Will Be Paid By

OHIO STATE UNIVERSITY
242 W. 18TH AVENUE
COLUMBUS, OHIO 43210

Dr. Earl B. Russell
The Center for Vocational Education
1960 Kenny Road
3030-340227-322A

trained in the competency-based concept. Participants will develop individual plans of action. If you are interested in receiving more information on this workshop to be held August 2–5, 1977, please complete the form provided and return to The Center.

3. Workshop Proceedings

Since the workshop will be a forum for sharing and exchanging ideas, the proceedings of these sessions will be published and made available. The workshop proceedings will emphasize practical steps in the implementation of new or improved competency-based adult vocational instruction. (Target date: September 30, 1977)

4. Final Report

This report will contain information and supporting data on the status of competency-based adult vocational programs sponsored by business, industry, labor, and education. This report will be of interest to developers and operators of competency-based instruction and also act as a readily available resource to all interested parties. (Target date: September 30, 1977)

For additional information please contact:

Earl B. Russell, Project Director
The Center for Vocational Education
The Ohio State University
1960 Kenny Road
Columbus, Ohio 43210

COMPETENCY-BASED ADULT VOCATIONAL PROGRAMS

THE CENTER FOR VOCATIONAL EDUCATION
THE OHIO STATE UNIVERSITY
1960 Kenny Road Columbus, Ohio 43210

COMPETENCY-BASED ADULT VOCATIONAL PROGRAMS

PROJECT

The Center for Vocational Education, under a grant from the U.S. Office of Education, Bureau of Occupational and Adult Education, is conducting a project to determine the status of competency-based adult vocational education programs. Relatively little is known about the status of these programs in the U.S. Although communication among teachers and trainers of adults is limited, education, business, industry, labor, and government agencies appear to be increasing their efforts in the competency-based approach to learning and training. Briefly, competency-based programs are defined as being based upon a job/task analysis, performance objectives, individualized instruction, and criterion-referenced testing. Adult vocational programs include non-credit, non-degree skill training for out-of-school persons over sixteen years of age.

Major Activities:

- select and meet with a National Panel of Consultants to resolve technical issues
- develop a set of criteria for competency-based instruction
- develop an instrument for surveying competency-based instruction
- obtain nominations of individuals or specific agencies to be contacted
- conduct mail survey of competency-based programs identified
- on-site review of selected programs
- compile a National Directory of Competency-Based Adult Vocational Instruction
- conduct the National Dissemination Workshop

PRODUCTS

1. Directory

This Directory will be the first of its kind available to competency-based instruction planners in all areas. The directory will list programs identified as having exemplary competency-based adult vocational instruction. The selection of programs to be listed will be based on their comparison to "textbook" characteristics of competency-based instruction. Each Directory listing will include a description of instructional components by job/occupational title, address, type of organization, how competencies are identified, how objectives are developed, how instruction is structured and performed, and how testing is conducted. (Target date: July 30, 1977)

2. Workshop

The Center for Vocational Education will conduct a National Dissemination Workshop during which programs and concepts of competency-based adult vocational instruction will be shared and exchanged. This will give developers of adult vocational programs the opportunity to be further

(continued on back)

NAME _____

TITLE _____

ORGANIZATION _____

ADDRESS _____ (no.) _____ (street)

_____ (city) _____ (state) _____ (zip)

The workshop to develop individual action plans of participants based upon project findings will be held at The Center for Vocational Education on August 2–5, 1977.

If you would like further notification when we begin accepting applications, please complete and return this form.

APPENDIX O

Follow-Up Request

THE CENTER FOR VOCATIONAL EDUCATION
The Ohio State University • 1960 Kenny Road • Columbus, Ohio 43210
Tel: (614) 486-3655 Cable: CTVOCEDOSU/Columbus, Ohio

FOLLOW-UP REQUEST!!

About two weeks ago, we sent you materials regarding the National Survey of Competency-Based Adult Vocational Instruction. This is a reminder for you to complete the survey if you have not already done so, or to check with your staff if you routed the material. (If the survey has been completed and mailed, please disregard this note.)

We would like to hear from your organization in order to identify exemplary competency-based adult vocational programs. Competency-based instruction is viewed as a promising means of improving adult vocational instruction. This survey is important in assembling information about competency-based programs and disseminating that information to program developers and operators.

Information about competency-based programs is being collected from selected personnel in education, business/industry, labor, and government agencies. We want to emphasize that your input is important to the success of this study. Your participation will result in the identification of competency-based adult vocational programs, and with your permission, may place a description of your training in a National Directory.

If you are the appropriate person to respond, please take 20 to 30 minutes of your time and complete the survey. A complimentary summary of findings will be made available to all participants. If you have lost or misplaced the survey form please write to: Earl Russell, The Center for Vocational Education, The Ohio State University, 1960 Kenny Road, Columbus, Ohio, 43210.

Thank you for your cooperation and assistance!

APPENDIX P

Site Visit Reports

APPENDIX P

COMPETENCY-BASED ADULT VOCATIONAL EDUCATION (CBAVE)
SITE VISITS

Alabama	Tallapoosa-Alexander City Area Training Center 100 East Country Club Drive Alexander City, Alabama 35010 Contact Person: Johnny H. Spears, Radio & TV Repair Instructor
California	Crocker National Bank 79 New Montgomery Street San Francisco, California 94104 Contact Person: Richard L. Ferrington, Vice President & Director of Training Woodruff Regional Occupational Center 302 West Weber Stockton, California 95203 Contact Person: Charles Walejko, Division Chairperson
Florida	Mid-Florida Technical Institute 2900 West Oak Ridge Road Orlando, Florida 32809 Contact Person: John Palowitch, Machine Shop Instructor
Idaho	Idaho State University School of Vocational-Technical Education Pocatello, Idaho 83209 Contact Person: Robert W. Simmons Machine Shop Instructor
Maryland	Harry Lundeberg School of Seamanship Piney Point, Maryland 20674 Contact Person: Charles Nalen Vocational Curriculum Coordinator

Michigan	State Technical Institute & Rehabilitation Center Alber Drive Plainwell, Michigan 49080 Contact Person: Robert Leneway, Instructional Technology Coordinator
Minnesota	916 Area Vo-Tech Institute 3300 Century Avenue White Bear Lake, Minnesota 55110 Contact Person: William Warner, Director of Allied Service Occupations Suburban Hennepin County Area Vo-Tec Centers 1820 North Xenium Lane Minneapolis, Minnesota 55441 Contact Person: John Kobe, Adult Vocational Director
New Mexico	Northern New Mexico Community College St. Vincent Practical Nurse Program Santa Fe, New Mexico 87501 Contact Person: Rosemary Sanderson. Program Director

CBAVE SITE VISIT

CONTACT: Johnny H. Spears, Radio and TV Repair Instructor
Tallapoosa-Alexander City Area Training Center
100 East Country Club Drive
Alexander City, Alabama 35010
Phone: (205) 329-8448

George L. Terrell, Vocational Director

SCHOOL DESCRIPTION

Tallapoosa-Alexander City Area Training Center is a three year old facility. Serving both Alexander City and Tallapoosa County, this area school is principally for 11th and 12th grade high school students from surrounding schools. The regular day program consists of 300 students and 15 teachers. This school is one of approximately 50 area vocational centers in operation and another 20 such facilities are under construction or are funded to be constructed in Alabama. About 70 of these area training centers will be open in Alabama by fall, 1977.

DETAILED PROGRAM DESCRIPTION (RADIO AND TV REPAIR)

During this past school year there were a total of approximately 150 adults in the school's adult evening program. In the radio and TV repair area, which was a new course in the adult program, there were 14 adults enrolled during the spring session. This adult program in radio and TV repair is 72 hours long, meeting in three-hour sessions on Tuesday and Thursday evenings for 13 weeks. The instructor keeps progress sheets on each student specifying performance objective assignment and completion date of the objective. Although Mr. Spears initiated the course, Mr. George L. Terrell, Vocational Director, provided administrative support and Dr. Douglas Patterson of Alabama's State Research Coordinating Unit and Director of the State's Performance-Based Adult Vocational Education (PAVE) project invited Mr. Spears to become a participant in the project which included workshop training in competency-based education for adults. Further descriptive information about this program is contained in the National Directory of Selected Competency-Based Adult Vocational Education Programs.

CURRICULUM AND INSTRUCTIONAL MATERIALS

For the most part Mr. Spears develops his own instructional materials for this course in conjunction with his participation in the performance-based adult vocational education project being conducted by the Alabama State Department of Education as mentioned above. He

Uses various commercial textbooks and actual electronic components as resources to support the curriculum materials he developed. Using the V-TECS catalog for the occupation, he rearranged the order of the 61 performance objectives from a simple to complex order for trouble-shooting or servicing. He then developed "instructional planning sheets" containing (1) necessary knowledges and skills, (2) learning activities, (3) resources--media and materials, and (4) student progress check notes.

STAFF TRAINING IN CBE

Mr. Spears has been teaching for three years after several years of practical experience in the occupation. He was trained in the area himself in the U.S. Air Force and was later an Air Force instructor of new students in electronics from 1964-68. After he became a teacher, he was a participant in a workshop sponsored by the Alabama State Department of Education on competency-based education for high school students in 1975. This was a four-day workshop. Most recently, he was a participant in a two-day workshop sponsored by the Alabama State Department of Education within the performance-based adult vocational education project under the direction of Dr. Douglas Patterson. This workshop was conducted December 9-10, 1976. Mr. Spears indicated his rationale for choosing the competency-based education approach in his teaching was that education is moving toward CBE and he "wants to get a head start."

STRENGTHS

As far as placement and follow-up are concerned, the program is too new as part of the experimental PAVE project to have information on adults who finished the program. In general, however, area electronics firms request students from the program at a rate higher than the number of students being trained in the program. Employer files are being maintained for subsequent follow-up after sufficient time has passed to provide meaningful follow-up data. Curriculum materials which were developed in the PAVE project are being used with 11th and 12th graders in the regular day program. Thus the adult program has had some positive spin-off benefits to the regular program of the school. Also, Mr. Spears indicated that the course is easy to teach once the instructional materials are developed.

LIMITATIONS

The development of instructional materials for each task and performance objective is time consuming. It is estimated that it takes approximately one hour to develop instructional materials for each task. He feels a standard list of reference materials for the course

are needed, keyed to the performance objectives.

GENERAL COMMENTS

Mr. Spears is one of the teachers in the "experimental group" in the PAVE project, sponsored by the U.S. Office of Education under a Part C project to be completed on December 31, 1977. The experimental group to which Mr. Spears belongs has been provided both a V-TECS catalog plus two-day workshops in their appropriate use. The other experimental group in the project received a V-TECS catalog only and were simply asked to teach the course using the catalog. The course described here was taught under formal agreement with the State Department of Education between January and June, 1977; the course is to be taught again between July and December, 1977, as part of the PAVE project.

CBAVE SITE VISIT

CONTACT: Mr. Richard L. Ferrington
Vice President and Director of Training
Crocker National Bank
79 New Montgomery Street
San Francisco, CA 94104
Ph: (415) 983-3297

ORGANIZATION DESCRIPTION

Crocker National Bank has 11,000 employees which makes it the 5th largest bank in California and the 12th largest in the United States. There are 350 branches statewide. The state is divided into seven districts with approximately 50 branch banks per district. The bank is organized into two types of divisions:

1. Five (5) profit making divisions: (California branches, Corporate Lending, International Lending, Trust Department and Corporate Services.

2. Six (6) staff divisions: Personnel Operations, Public Affairs, Marketing, Auditing and Controllers.

Mr. Ferrington is director of a training staff of 23 people, located in the bank's administrative center in downtown San Francisco. The training staff provides all training and development services to the entire bank. These services range from executive development programs in the United States and abroad to teller and proof operator training in the California branches.

The training department performs a centralized research, analysis and design function providing de-centralized training programs to each of the divisions.

DETAILED PROGRAM DESCRIPTION (COMMERCIAL LENDING)

In order for a bank employee to enroll in Commercial Lending I, course prerequisites in basic accounting and financial analysis are required. In Commercial Lending I there are 15 units or modules of study and practice, and a 16th unit on "Assuming on-the-job Responsibilities." An employee typically can complete the first 15 modules in 8-12 weeks. These modules are completely open entry/open exit and employees progress generally within the time range indicated based on their capabilities and time requirements. The 16th unit on "Assuming on-the-job responsibilities" operates over a fixed time period of 8 weeks for all learners. The program began March 1, 1977, and by the end of December, 1977, all of the bank's 807 commercial loan officers will have been certified in Commercial Lending I. This competency-based program was initiated by Mr. Ferrington, who is an advocate of Robert Mager's approach to Competency-

Based instruction. Course managers are available at each branch bank at set times, normally near the end of the working day. These course managers are concerned primarily with testing and student observation as they proceed through modules on the job during training. Another type of member of the instructional team are course advisors who are specialists in one or more of the modules under study. A course advisor is available for consultation to learners whenever they have difficulty with any part of a module. This differentiation of role between course managers and course advisors is an important distinction in the organization of this competency-based course. Course managers typify the CBE specialist, while the course advisor may be regarded as a content specialist. As would be expected, novices take more time to complete the course in Commercial Lending I than do experienced lenders. Nonetheless, the bank now requires that loan officers, experienced or not, be certified in this course.

CURRICULUM AND INSTRUCTIONAL TRAINING MATERIALS

Course materials are kept primarily in a set of three large loose-leaf notebooks. There is a "learner workbook" which learners keep during and upon completion of instruction. In addition, there are two "resource notebooks" which are kept at each branch training site for reference during instruction and after it is completed. The resource or reference notebooks contain concept papers, bank policy papers, published articles from a number of sources, examples of contracts, and internal bank forms. The learner workbook contains similar material which have been highly selected to present the basic information required in support of the learning activities in each module. All three of these notebooks are learner materials and there is no separate "instructor guide." It is important to note that virtually all instruction occurs in an on-the-job setting where a course manager and/or course advisor works directly with the loan officers in servicing actual customers. With this approach, it would therefore be inappropriate to use audio-visual materials and equipment in this type of on-the-job training setting. Thus, the job aids, guides, forms, and other materials provided are precisely the kinds of materials which would be used by a commercial loan officer. Further information about this program is contained in the National Directory of Selected Competency-Based Adult Vocational Education Programs.

STAFF TRAINING IN CBE

Mr. Ferrington has a background in U.S. Army training program development. Associated with that experience he was employed with the Human Resources Research Organization (HumRRO). He became a training director with HumRRO, which at that time was an Army-affiliated R and D organization. Upon leaving the service, he came to Crocker National Bank as Director of Training. Mr. Ferrington's staff are all trained at Robert Mager's Seminar in San Mateo. They then apply his methodology to their curriculum development. This staff trains course managers throughout

California. Course managers were taught what a course manager should do in competency-based instruction via a one-day course using simulation, role-playing, and discussion. He indicated that this training was rather easy because the course managers had been integrally involved in the course development process from the outset. The CBE approach was chosen after the bank's Chairman of the Board hired a new training staff. Subsequently Mr. Ferrington got approval to conduct a systematic training needs analysis for the bank. Based upon that analysis, the competency-based approach to training became a high priority with full backing of the bank's administration.

STRENGTHS

There are 14 course managers per district and all are bank employees in easy commuting distance of each branch. Everything in the course is "real"--all instruction consists of on-the-job activity. The course is based totally on Robert Mager's approach to criterion-referenced instruction, which begins with a detailed job analysis. Crocker National Bank employs all the learners taking Commercial Lending I and the bank is committed to assuring that all the bank's commercial loan officers are certified through the course in the future.

Limitations

There is a time constraint on the availability of course managers to work with learners when they need help. As was indicated earlier, course managers are typically available near the end of the work day and therefore may be unavailable to provide on-the-spot assistance when a person enrolled in the course confronts a problem at other times during the work day.

CBAVE SITE VISIT

CONTACT: Mr. Charles Walejko, Division Chairperson
Woodruff Regional Occupational Center
302 West Weber
Stockton, CA 95203
Ph: (209) 466-4841

Donald Robinson, Principal

SCHOOL DESCRIPTION

Woodruff Regional Occupational Center, similar to "area schools" in other states, was one of the first regional occupational centers opened in California five years ago. At the present time there are eight such centers in the state. The Woodruff Center is a San Joaquin County facility administered by the Stockton Unified School District. Fifteen regular high schools and two private schools from eight school districts are served by The Center. The school serves both 11th and 12th grade high school students and adult students. Of the approximately 1,450 total students enrolled, 950 or 70 percent are adults. The total student body of the school is approximately 15 percent Black, 24 percent Mexican-American, 5 percent Asian, and the remainder are Caucasian. Programs are offered in: Automotive, Business Careers, Business Machine Repair, Cosmetology, Drafting, Electronics, Health Science, Marine & Small Engines, Medical Office Assistant, Welding, and Operation and Maintenance.

DETAILED PROGRAM DESCRIPTION (BUSINESS CAREERS)

The Business Careers program in its present competency-based form is about five years old. In addition to Mr. Walejko as Division Chairperson, the Division has four full-time teachers and two full-time aides who work together in a large classroom area. The classroom has the appearance of an open-landscape office area which may be found in many businesses. In addition, the program has a "community classroom" teacher who visits students on the job after the school program is completed to assist in their transition from school to work and in supervising learning activities that cannot be provided in school. This "community classroom" teacher works somewhat like the familiar cooperative education coordinator. Most students are in the Business Careers program 2-4 months. The two aides in the program are bilingual and they spend a good portion of their time working with predominantly Spanish-speaking students. The advanced status of competency-based education in this program was facilitated by state law passed in 1965 creating Regional Occupational Centers and Programs throughout California. Dr. Robert DeBord, former Vocational Education Director at the Regional Occupational Center and

Director of Adult and Vocational Education at the Lodi School District, north of Stockton, provided an early impetus for the initiation of the CBE program described here. Strong support for implementing the competency-based Business Careers program was also provided by the Bureau of Business Education, State Department of Education, in Sacramento. The program can give credits and grades to fit traditional high school requirements for high school students, even though the program is open entry/open exit. The individualized approach allows adults and high school students to be enrolled at the same time. Mr. Walejko has developed this procedure by simply designating letter grades for the various competency levels which students achieve in the program. Job titles for which students are prepared in the program include Clerk Typist, Receptionist, General Office Clerk, Payroll Clerk, Stenographer, Duplicating Machine Operator, and Accounts Clerk. Further information about this program is contained in the National Directory of Selected Competency-Based Adult Vocational Education Programs.

CURRICULUM AND INSTRUCTIONAL TRAINING MATERIALS

The curriculum and instructional materials for the Business Careers program are highly developed and well managed. There are three categories of competencies in the program, "common core", "office core", and "specialty areas" There are 17 competency areas in the "common core" and 12 competency areas in the "office core." "Specialty areas" usually contain 4-5 competencies pertaining to those areas only. For example, the stenographer specialty area includes shorthand and transcription. If pre-testing reveals that a student is not competent in the telephone area in the common core, for example, there are eight learning packages that must be completed by the student before taking the post-test in the telephone area. The packages are kept at an Inventory Desk which is maintained by a full-time employee. For each performance objective, there are carefully developed conditions and standards of performance specified. In each competency area there also are sheets containing instructional ideas and lists of materials which teachers may employ in working with students having difficulty in a given competency area, or with different methods of learning. When students experience no unusual difficulty in selected competency areas, they are free to work alone through the appropriate learning packages for the competency. Management of this procedure is facilitated by the use of student contracts which are developed by agreement between student and teacher. These student contracts typically cover 1-3 competency areas at a given time and represent a basis for both student and teacher to monitor performance. For many of the learning packages used, these are supporting audio-visual materials such as audio tapes, slide-tape sets, or filmstrips for student use.

STAFF TRAINING IN CBE

Mr. Walejko got most of his training in competency-based education through workshops provided by the Bureau of Business Education, California State Department of Education. Teachers within his department got on-the-job training in competency-based education, working closely with Mr. Walejko and with each other, and by also attending two, two-day State Department of Education workshops. He feels that some of the most important "training" took place by his and staff members visiting demonstration sites in California. These demonstration sites are supported financially by the State, and activities at demonstration sites are carefully structured to assure a learning experience for those who participate. One teacher in the department was formerly an executive secretary; another has office experience plus a Master's degree in business education; and a third has banking experience plus a Bachelor's degree in business education. One of the teacher aides is a former student however both were trained on the job by the teaching staff.

STRENGTHS

This program is highly refined and represents an excellent CBE model. The major strength pointed out for the program is that it is geared to meet the needs of every student and that students may not "fail" as is common in a traditional instructional approach. Mr. Walejko had taught for several years in a traditional instructional program prior to getting involved in CBE in California. He indicated that he has observed dramatic advantages to students in a CBE program as compared to students in his program prior to 1972. Within the past five years over 600 students have been placed from the Business Careers program in office occupations. There is no "placement" program as such; instead, local business people call the Regional Occupational Center and ask for employees. A systematic student follow-up program is employed whereby the school's staff calls each former student on the job at 3, 6, and 12-month intervals following initial employment. Students are routinely asked for suggestions as to how the instructional program should be modified to meet the job requirements they are facing. No hard data exist on employer satisfaction, but it is felt that the many calls which come to the school requesting students from the program are an excellent unobtrusive measure of employers' pleasure with the training. Also, Mr. Walejko gets a lot of informal, positive feedback from his program's Advisory Committee.

LIMITATIONS

The primary limitation currently is that a method has not been developed to obtain hard follow-up data from employers of former students. The school is planning to develop such a follow-up program consistent with the requirements of the Education Amendments of 1976.

GENERAL COMMENTS

It was emphasized that school personnel need time to develop a CBE program before they can operate. Ideally, Mr. Walejko feels that teachers should take an entire summer to develop competency-based curriculum, free of other assignments, under the guidance of good resource persons to assist them. Good planning is essential for preparing a CBE program. Much paperwork is involved and good typing and duplicating capabilities need to be readily available. To develop the commitment of administrators and counselors, Mr. Walejko feels that structured site visits are more effective than workshops.

CBAVE SITE VISIT

CONTACT: John Palowitch, Machine Shop Instructor
Mid-Florida Technical Institute
2900 West Oak Ridge Road
Orlando, Fl 32809
Ph: (305) 855-5880, ext. 38

William Murphy, Assistant Director

SCHOOL DESCRIPTION

Mid-Florida Technical Institute is an area technical-vocational school, accredited by the Florida State Department of Education, and operated by the Orange County Board of Public Instruction. In addition to vocational-technical instruction, students may complete academic requirements for a high school diploma. Students may also receive certificates of proficiency upon satisfactory completion of vocational-technical courses. The Institute offers training in some 20 fields and is designed to accommodate 2,000 full-time students. Although it is basically an adult school, high school seniors may begin careers in vocational-technical areas while remaining enrolled in their own schools. Adult programs offered in the school are non-credit, non-degree, except for drafting, printing, and hotel/motel management, which are now accepted for college credit in Florida. Adults who are not high school graduates can earn the General Equivalency Diploma (GED) at Mid-Florida Tech, but seniors from surrounding high schools may attend and earn high school credit on a part-time basis, in both academic and vocational areas.

DETAILED PROGRAM DESCRIPTION (MACHINE SHOP)

The machine shop course has been prepared to serve three types of students: high school students for credit; adults, with or without high school diplomas, who want to prepare for employment; and adults employed as machinists who want to upgrade their skills. Although students in the machine shop course range from 18 to over 60 years of age, most of the adults enrolled are in their late 20s or early 30s. The machine shop program has been approved by the Veterans Administration for training of former military personnel. Veterans are required by VA regulations to spend a given number of clock hours in order to be reimbursed for training. More specifically, regular non-veteran adult students may enroll in the program under no time constraints, adults in the VA program must enroll for a two-year, 2,400-hour course, or 30 hours per week, and credit requirements for high school seniors are that they must take 540 hours of machine shop during the senior year. Thus, the great diversity of students enrolled in the machine shop program has resulted in a highly flexible and individualized program in spite of arbitrary time requirements which are beyond the administrative control

of Mid-Florida Technical Institute. Mr. Palowitch is the lead instructor among the three who teach in the machine shop program. Further descriptive information about this program is contained in the National Directory of Selected Competency-Based Adult Vocational Education Programs.

CURRICULUM AND INSTRUCTIONAL MATERIALS

The principal type of curriculum materials used in the program are individualized Learning Activity Packages (LAPs) which Mr. Palowitch has developed for classroom use since about 1970. These Learning Activity Packages were in use before V-TECS catalogs became available in 1975. The Learning Activity Packages had contained a statement of "operation" (which may be defined similar to a task), a specification of tolerances or standards for the operation, a list of steps necessary to achieve the operation, and a list of necessary reference materials and equipment needed. The instructors supplement information contained in the materials whenever needed by the students. Now that V-TECS catalogs are available which contain validated tasks performed by encumbent workers in machine shops, Mr. Palowitch is rewriting his LAPs based upon the 186 performance objectives which are specified in the V-TECS catalog. However, the curriculum and instructional materials used in the machine shop program are a result of an evolutionary process over a period of many years' experience which Mr. Palowitch has had in industry. When he worked in industry he used what were called "process" sheets, which are similar to the performance objectives and performance guides contained in V-TECS catalogs.

STAFF TRAINING IN CBE

In 1975 the Florida State Division of Vocational Education received a Federal grant to develop a delivery system for competency-based vocational education, including both pre-service and in-service training. Mr. Palowitch was initially selected to be one of 50 demonstration teachers in competency-based education throughout Florida. To date 17 teachers remain in that "model" group and Mr. Palowitch is still a member of that group. The 17 demonstration teachers meet each quarter to work on strategies for material development, program development, and in-service training of other staff members. This group began intensive training in July, 1977, in strategies and techniques for diffusing competency-based vocational education in Florida. A relatively new teacher on Mr. Palowitch's staff is Mr. Charles Casada. Mr. Casada recently completed a course at Florida Technological University on curriculum development using V-TECS catalogs as part of his becoming a certified machine shop teacher. Mr. Cunningham, Assistant Director of Mid-Florida Technical Institute, is the teacher of the course at Florida Technological University on development of competency-based curricula. Mr. Cunningham also serves as a resource person to staff members at Mid-Florida Technical Institute in facilitating their training and work in competency-based vocational education.

STRENGTHS

In addition to the technical quality of the machine shop program, the unique interpersonal qualities of Mr. Palowitch with both his students and staff members represent a great program asset which would be very difficult to instill in other teachers. He made reference a number of times to the "personalized" machine shop program rather than an individualized program to emphasize the interpersonal dimensions which exist between his students and him. Placement of program completers presents no difficulty, since industry needs are greater than the number of persons completing the program. Although there are relatively few employers of machinists and machine operators in the Orlando area, placement, equipment needs, and program content are facilitated by each of those employers serving on the program Advisory Committee. For the regular adult student, the program operates as a resource center with students free to come and go as they please.

LIMITATIONS

Related to the strength just mentioned is a corollary lack of "control" over students in the traditional school sense. Some of the individuals have high absentee rates. However, no student is recommended for employment unless competency is achieved in the course. Another limitation presently is the huge gap between V-TECS catalogs and students' work on machines in the shop. There is an immediate need to develop corresponding Learning Activity Packages for each V-TECS performance objective so that the content of the V-TECS catalog can be delivered more directly to students.

GENERAL COMMENTS

See the article: John W. Palowitch. "Dump the Project Approach! Try the Operation Method. "School Shop, Vol. 34, No. 7, March 1975, p. 37.

CBAVE SITE VISIT

CONTACT: Mr. Robert W. Simmons, Machine Shop Instructor
School of Vocational-Technical Education
Idaho State University
Pocatello, ID 83209
PH: (208) 236-3262

Harold D. Garbett, Director
School of Vocational-Technical Education

SCHOOL DESCRIPTION

Idaho State University has a total enrollment of approximately 10,000 students. Established in 1901, the school was first an academy, then a technical institute, later a branch of the University of Idaho, still later an independently administered four-year college, and in 1963 became a state university. Originally the school had agricultural and mechanical programs and these remain a strong tradition there to the present time. The School of Vocational-Technical Education is unique in that it offers no degrees. Students of the Technology Programs may elect to take Vo-Tech courses for credit toward a degree in the College of Liberal Arts, however. The degree is entitled "Associate of Technology" and is a two and one-half year program. Idaho State University also offers a baccalaureate degree in vocational-technical teacher education through the College of Education.

DETAILED PROGRAM DESCRIPTION (MACHINE SHOP)

The competency-based machine shop program is designed to bring adult students to entry-level competency in specific machine shop occupations. For example, students may be trained for occupations such as machine tool operator, heavy duty machine operator, production machine operator, or general machinist.

The length of the various programs options are as follows:

Machine Tool Operator	720 Contact Hours	24 weeks
Heavy Duty Machine Operator	1440 Contact Hours	48 weeks
Production Machine Operator	1440 Contact Hours	48 weeks
General Machinist	1920 Contact Hours	64 weeks

These classes are intended for students who must hold jobs while developing careers as machinists. Students may complete 480 hours of training by attending class 7½ hours weekly between 7:00 p.m. and 10:45 p.m. Students may complete 720 hours of training by attending class 30 hours weekly between 4:00 p.m. and 11:00 p.m. The students' ages range from recent high school graduates to retires of the Armed Services. A variety of ethnic backgrounds are represented. Student

enrollment includes blacks, native Americans, Chicanos, females and an engineering graduate from India.

The competency-based program in machine shop was initiated by Mr. Simmons, Mr. Garbett and Mr. Ardell Smiley, Chairman of the Commercial and Industrial Education Department, as an approach to update the course in the 1975-76 school year. The program has a 10-member advisory committee consisting of eight management representatives and two machinists.

CURRICULUM AND INSTRUCTIONAL MATERIALS

Organized primarily on the basis of contact hours, the machine shop program is organized into 38 "courses" which represent units or modules of instruction. The curriculum outline for each of these instructional segments contains the number of credits, contact hours required, prerequisites, course description, basic tasks, and terminal performance objectives and a competency evaluation progress chart. The major instructional materials for classroom sessions are almost entirely instructor-developed with supplementary text, including manufacturers' operation and service manuals for specific machines. Students must demonstrate knowledge of machine operations and safety practices prior to hands-on instruction. "Research Sheets" are used for students to individually pursue answers to a series of open-ended questions in each course or unit. References are listed on these Research Sheets for students to consult, with directions to complete the questions, and return when finished to the instructor for discussion, grading, and job assignment. After having areas of weakness diagnosed and corrected, students carry out machine operations based upon the classroom sessions. Finally, students are given pencil-paper "Advancement Quizzes" which they must complete without the aid of any reference materials. Upon satisfactory completion of the Advancement Quiz and shop exercises, the student is allowed to progress to the next course of instruction. An evaluation of each task is recorded on each student's competency evaluation progress chart. Evaluation is on a scale from 1 to 6.

Films are used to emphasize safety, and to introduce basic lathe & mill operation. Video tapes are used to present drilling, sawing, and Carbide turning and milling. Instructors are utilizing Machinery's Hand Book in development of lesson plans and assignment sheets. All students own a Hand Book. Working blueprints obtained from industry are used in drawing and blueprint reading courses. Further information about this program is contained in the National Directory of Selected Competency-Based Adult Vocational Education Programs.

STAFF TRAINING IN CBE

The School of Vocational-Technical Education initially conducted a series of workshops on measurable objectives during 1972-75. These

workshops have subsequently been developed into courses which are offered within the teacher education program in the College of Education on campus. All instructors in the School of Vocational-Technical Education are encouraged to take, as part of their inservice professional development, what has become a series of interrelated courses. The courses are: (1) Measurable Performance Objectives, (2) Curriculum Development, (3) Occupational Analysis, (4) Tests and Measurements, and (5) Laboratory Organization and Management and, Methods of Teaching Vocational-Education. In addition, Ms. Elena Hernandez on the School staff is in charge of planning a series of CBE workshops for instructors in the coming months. Training efforts, for staff have grown from a recognized need to improve traditional job analysis procedures, and methods for making objectives measurable. Specific impetus to the training grew from Mr. Garbett's attendance at a workshop conducted by Robert Mager. He later read Mager's book and was committed to measurable objectives in vocational education. Concurrent with these developments, Mr. Simmons felt that much of the course content prior to this time was immaterial and that student achievement of competency was unclear.

STRENGTHS

The major strengths pointed out for the competency-based machine shop program is its great versatility with many student options. Each student can progress at his own rate within reasonable limits. Due to the high industry demand for program graduates, there is no formal placement program. The placement rate for the program is approximately 95 percent. The School operates a computerized follow-up program of former students at one and three years after completion. The follow-up is done in two parts in which students complete Part I of the follow-up before leaving school regarding where they can be reached in the future, and Part II, the predominant part of the follow-up effort, after the student is on the job. By using this procedure, the student follow-up return rate is consistently about 80 percent, which is exceptionally high for such studies. Employer satisfaction with program graduates is very high based on feedback obtained by instructors who make individual visits to employers to inquire about former student weaknesses in specific competencies.

LIMITATIONS

The highly individualized nature of instruction and the consequent diverse training which takes place in the machine shop requires that enrollment must not be over eight students for each instructor at one time. Mr. Simmons and Mr. Garbett feel that instructional costs are greater in the competency-based mode, but that many additional benefits, which are difficult to measure, are evident to them from their own observations and from industry feedback.

CBAVE SITE VISIT

CONTACT: Mr. Charles Nalen, Vocational Curriculum Coordinator
Harry Lundeberg School of Seamanship
Piney Point, MD 20674
PH: (301) 994-0010

Ms. Hazel Brown, President

SCHOOL DESCRIPTION

The Harry Lundeberg School of Seamanship is the largest training facility for deep sea merchant seafarers and inland waterways boatmen in the United States. The School has developed a pioneering approach to education which has successfully integrated vocational training, academic enrichment, and trade union responsibility. Named after the founder and first president of the Seafarer's International Union, the Harry Lundeberg School is the product of a unique cooperative effort of the Seafarer's Union and the management of privately-owned American flag deep sea ships and inland waterways towboats. The School's training programs are sanctioned by the United States Coast Guard, and its academic curriculum is accredited by the Maryland State Department of Education. Originally, the Lundeberg School maintained training facilities in a number of ports throughout the country. However, as technology advanced in the industry, it became necessary to centralize training activities at the present site in 1967. The School is located on the southernmost tip of Maryland, where the Potomac River meets the Chesapeake Bay. The number of trainees on campus ranges from 200-300 at any one time. Trainees are generally on campus for three months, taking a variety of vocational courses as well as academic courses if they have not completed a high school diploma. The School provides training to entry trainees with no prior maritime experience and to experienced trainees who are seeking professional advancement through the career upgrading program. A complete high school equivalency (GED) program is offered, as well as evening self-enrichment classes and training, and reading and study skills.

The campus consists of administrative offices of the school, classroom facilities, resident quarters, and dining halls. Vocational and academic classes are taught aboard two "schoolships" to approximate life in the industry as closely as possible.

DETAILED PROGRAM DESCRIPTION (BASIC VOCATIONAL EDUCATION AND UPGRADING PROGRAMS)

In basic vocational education, an entry student enrolls in the deckhand/tankerman program. This program offers training for the deep sea entry ratings and inland towboat deckhand. Entry trainees are

generally 18-24 years of age and they come to the School from throughout the United States.

The upgrading program for experienced personnel at the Lundeberg School consists of courses for all U.S. Coast Guard endorsements for unlicensed ratings in the deck and engine departments. The towboat upgrading offers training for all ratings and licenses available to boatmen. Non-Coast Guard endorsement programs are also offered in the steward department for deep sea cooking or towboat inland cooking. Examples of special upgrading programs include Marine Electrical Maintenance, Maintenance of Shipboard Refrigeration Systems, and Pumproom Operation and Maintenance. While the basic vocational education program is structured around a standard three-month period, the upgrading program for experienced trainees provides the option for them to "test out" whenever they can satisfactorily demonstrate competence. The Lundeberg School works closely with the U.S. Coast Guard in testing, and Coast Guard personnel administer the tests at no cost to the School.

Attention will be focused here on four of the vocational education programs at the Lundeberg School.

- Deckhand/Tankerman
- Marine Electrical Maintenance
- Welding
- Lifeboatman/Able Seaman

The Deckhand/Tankerman course is the longest of the four, consisting of six two-week mini-courses. These are Basic Deck, Lifeboat, Steward, Basic Engine, Tankerman, and Advanced Deck. Marine Electrical Maintenance includes use and care of electrical instruments, troubleshooting of electrical equipment, and starting, securing, and paralleling towboat generators. The Welding program includes instruction in both arc welding and oxy-acetylene welding. Lifeboatman/Able Seaman is actually a sequence of two shorter courses. Lifeboatman includes on-deck training in raising and lowering lifeboats and in properly rowing lifeboats. This skill training portion of the course makes up approximately 50 percent of its content. The other half of the course, Able Seaman, consists of much teacher lecture and discussion to prepare upgraders for the Coast Guard examinations. These pencil-paper, multiple choice examinations must be passed in order for trainees to receive appropriate licensing by the Coast Guard. Further information about these four courses is contained in the National Directory of Selected Competency-Based Adult Vocational Education Programs.

CURRICULUM AND INSTRUCTIONAL MATERIALS

The curriculum and instructional materials for two of the courses, Deckhand/Tankerman and Lifeboatman/Able Seaman, are developed, utilized, and revised based on regular inputs from advisory committees consisting

of industry, Union, and Coast Guard representatives. Curriculum materials used in the Marine Electrical Maintenance and Welding courses are developed entirely by the instructors. There is considerable variation from course to course, and even within segments of some courses in the types of instructional materials used. Generally, across all courses, constant efforts are made to minimize the time spent in lecturing and using printed materials, while maximizing time spent in conducting demonstrations, discussions, and working with real tools and equipment as will be done on the job following training.

In the Deckhand/Tankerman course, the segments dealing with Basic Deck, Lifeboat, Tankerman, and Advanced Deck are taught almost entirely outdoors aboard the schoolships and adjacent docks. In the Basic Engine and Steward segments of this course, more classroom audio-visuals are employed due to the nature of the course content. Slides, film loops, films, and transparencies are used to illustrate these concepts. In the Welding course, two programmed textbooks are used. One is Basic Arc Welding and the other is Basic Oxy-Acetylene Welding, published by Delmar Publications (Albany, New York). Each student has his own copy of these programmed texts and they are used as workbooks which the student may keep. Some films are used as a supplement to these programmed texts. Materials used in the Marine Electrical Maintenance course are developed entirely by the instructor who has a background in U.S. Navy instructional systems development. A mobile training aid built by the instructor is the predominant audio-visual used to teach this course; some Navy films are used as supplements. The Lifeboatman/Able Seaman course relies almost totally on instructor demonstration and hands-on training aboard ship in the Lifeboatman portion. The Able Seaman portion of this course relies heavily upon printed materials in support of teacher lectures as upgraders prepare for Coast Guard examinations.

STAFF TRAINING IN CBE

Schoolwide leadership in competency-based education has been provided by Hazel Brown since she became President of the Harry Lundeberg School in 1972. Charles Nalen, Curriculum Coordinator for the Vocational Department, and several of the vocational instructors have received training in CBE, development of lesson plans, and development of teaching aids, from Dr. Donald Maley, Professor of Vocational Education at the University of Maryland. However, most instructor training in CBE is done on an individual basis by Mr. Nalen based on his observations and consultations with instructors.

STRENGTHS

Mr. Nalen indicated that the CBE mode of instruction more effectively supplies manpower to the industry than traditional programs did. Instructors utilize their time more effectively than in previous years because they know more clearly the job requirements of industry, and the purpose for courses is therefore clearer than before. Since the

program is designed to serve the Seafarer's International Union, students' placement is automatic in the industry following program completion. Follow-up information is obtained from the employers during semi-annual meetings of the School's advisory committee. Information on retention rates, performance problems, and changing industry needs are discussed.

LIMITATIONS

A difficulty experienced at the School is the conflict between the competency-based approach, which the School is effectively implementing, and the traditional pencil and paper tests required for licensing by the Coast Guard. The staff indicated that the Coast Guard exams frequently contain items which are obsolete, but which students must learn in order to pass the tests. Coast Guard exams are not criterion-referenced except in navigation where they contain a few plotting exercises. The tests are otherwise multiple choice. The Harry Lundeberg School would prefer competency testing, but it is very unlikely that this will occur in the very near future by the Coast Guard.

GENERAL COMMENTS

The instructional program at the Harry Lundeberg School of Seamanship is indeed unique and of exceptionally high quality. The School has excellent management, professionalism throughout the staff is very high, and students are obviously interested in and involved actively in the learning process.

CBAVE SITE VISIT

CONTACT: Mr. Robert Leneway, Instructional Technology Coordinator
State Technical Institute and Rehabilitation Center (STIRC)
Alber Drive
Plainwell, MI 49080
PH: (616) 664-4461

Mr. Leonard W. Lee, Director
Mr. Del Anderson, Supervisor of Instruction

SCHOOL DESCRIPTION

The Institute lies near the center of the Kalamazoo, Grand Rapids, Battle Creek triangle and is located 10 miles northeast of Plainwell at Pine Lake. The primary purpose of the Institute is to conduct vocational and technical training programs and provide the supportive services needed to prepare Michigan's disabled adults for successful employment. The school is part of the Vocational Rehabilitation Service of the Michigan Department of Education and it is approved by the Veterans Administration. The campus houses living and training facilities for all single students. Currently there are approximately 400 students in training, ranging in age from 17 on up. The school receives approximately $2 million in State Vocational Rehabilitation funds per year. It is classified as a comprehensive rehabilitation center. The school has 14 training departments, auto mechanics being one of them, which provide training in 36 occupational areas. In addition, there is a Learning Technology Department which serves the various training departments. The Director of the Institute supervises the divisions of Instruction, Support Services, Medical, and Business Management. There are 37 trade and related instructors in the school. Ninety-five percent of the students are disabled (orthopedic, personality disorders, hearing impaired, visually handicapped, etc.). The Vocational Rehabilitation Service supports 92 percent of the students at the Institute; 93 percent are males; 15 percent are minority students; and 60 percent are high school graduates.

DETAILED PROGRAM DESCRIPTION (AUTO MECHANICS)

The auto mechanics program operates under a school-wide competency-based education approach coordinated by Mr. Robert Leneway. The competency-based approach is relatively new in the Institute and auto mechanics is the training department in which CBE is most completely implemented. Students may enter the competency-based auto mechanics program at almost any time. The CBE system at Capitol Area Career Center in Mason, Michigan, is being used as the model for program adaption at the State Technical Institute and Rehabilitation Center. The auto mechanics job analysis and supporting curriculum materials were obtained from Capitol Area Career Center and were adapted

for handicapped adults based upon suggestions by Advisory Council members, school administrators, and instructors. For Auto Mechanics there are three "Certification Levels" which students may achieve in a given performance objective: 1= no time limit; 2 = flat rate plus 50 percent; and 3 = flat rate or less. Examples of occupational areas (within the Auto Mechanics Training Department) included are Front End Specialist and Brake Specialist. The Institute's academic programs in reading and math are strictly remedial. Further information about this auto mechanics program is contained in the National Directory of Selected Competency-Based Adult Vocational Education Programs.

CURRICULUM AND INSTRUCTIONAL MATERIALS

Instructional modules are in use which are supported by slides, tapes, filmstrips, film loops, etc., in a highly mediated learning resources center adjacent to the auto mechanics shop. To be successful, students must know how to read. A new Vocational Reading Competency-based Support program is being implemented to assist students with the reading prerequisite. Problems are detected by testing students on tasks in the shop. The modules psecify performance objectives, the "givens" or conditions under which the objectives must be performed, and criterion of success which is often based on the time required to achieve the objective. All instructional materials were developed from prototypes obtained from the Capitol Area Career Center. Management of curriculum and instructional materials is done in part by use of "prototype lists" which contain module numbers, titles and objectives.

STAFF TRAINING IN CBE

The curriculum consultants from the Capitol Area Career Center have worked closely with the auto mechanics staff to work out problems with the competency-based instructional materials. In addition, consultants have held two workshops for Institute staff on (1) task analysis, and (2) the modularized, competency-based system. Following these workshops, these selected staff members who were trained, visited Capitol Area Career Center to observe the competency-based program in operation there. Subsequently, a committee consisting of the two auto mechanic instructors, Paul Henke and Jack Trumbla, Department Counselor, Robert McAllister, School Director, Leonard Lee, Instructional Supervisor, Del Anderson, and Project coordinator Robert Leneway, met on developing a competency-based automotive education program and establishing procedures for implementing the system at the State Technical Institute and Rehabilitation Center (STIRC). Subsequently, modules were selected for use and were modified to fit the Institute's equipment and disabled adult population. The Capitol Area Career Center clusters their automotive offerings as follows, Heavy Mechanic, Light Mechanic, Service Station Attendant, Tire and Exhaust Specialist and Diagnostic Specialist. Where the State Technical Institute CBE committee chose to cluster modules around the National Institute for Automotive Service Excellency Cerfification categories. Passing the N.I.A.S.E. or the Michigan Motor Vehicle Mechanic Program

exams became the terminal objectives for each of STIRC prototype clusters. It was felt by the CBE committee that this would allow for STIRC disabled adults, while maintaining quality training standards. In addition to specific CBE training, both the auto mechanics department head and the auto machine shop instructor have had approximately 20 years of experience in the industry prior to teaching.

STRENGTHS

A driving force behind the success of this competency-based effort is the administrative support and leadership given to the teachers. One of the primary reasons the school administration chose to begin CBE in auto mechanics was that the instructors were viewed as being among the most willing to implement new instructional approaches. There is a move toward school-wide CBE, and the administration is considering mandating CBE in all training areas in the next two years. In addition to a statewide institutional advisory committee, there is an advisory committee for each occupational program. These committees meet 1-2 times per year as a group. The job placement rate of program completers is approximately 95 percent across all programs.

LIMITATIONS

Open entry/open exit CBE creates problems in administration and certification. Also, keeping module support materials organized has been difficult; however, a person has been employed to help in maintaining material organization.

GENERAL COMMENTS

The Institute has a five-year goal to implement an "open enrollment" concept. If this goal is achieved, CBE would be a school-wide requirement. Under this open entry-open exit system students would be able to enroll as a program opening occurred and exit when they have completed as many task modules as they are capable of or are interested in mastering. STIRC feels that if enrollment can be more stabilized with an open entry/exit system, then the relative cost per enrollee can be reduced and more severely handicapped students can be served. It is anticipated that a CBE system is the most appropriate process for attaining this goal.

CBAVE SITE VISIT

CONTACT: Mr. William Warner, Director of Allied Service Occupations
916 Area Vo-Tech Institute
3300 Century Avenue
White Bear Lake, MN 55110
Ph: (612) 770-2351

Mr. Patrick T. Gerkey, Lead Instructional Developer

Dr. William C. Knaak, Superintendent

SCHOOL DESCRIPTION

The Area Vo-Tech Institute (AVTI) is an operating post-secondary part of Special Intermediate School District 916 which serves nine local school districts. District 916 also operates a shared time vocational center for 14 senior high schools and extensive adult part time and extension vocational training. Any postsecondary or adult student in the state can attend the Institute. Special reciprocal provisions are available for Wisconsin and other bordering states. Other out-of-state or International students may attend on a full-cost basis. High school and postsecondary students participate in the same vocational programs because the competency-based, individualized instructional program is operational throughout the school system. The Institute was opened in 1972 under the leadership of its present Superintendent, Dr. William C. Knaak. There are 198 teachers in the school, and 7-9,000 annual enrollments, including 5,500 in the adult evening program. Soon after the school opened, the School Board adopted a policy requiring that at least 20 percent of the training slots be available to disadvantaged and handicapped persons. The school has effectively committed itself to that goal, and presently 30 percent of the day students are classified as disadvantaged and handicapped.

DETAILED PROGRAM DESCRIPTION (Personalized Vocational-Technical Instruction)

The CBE program in operation at this Institute is uniformly and effectively applied across all courses taught in the school. The CBE program was designed and developed before the school opened in 1972. The adult program at the Institute utilizes essentially the same CBE curriculum materials which are used in the postsecondary school program. Materials are developed by the daytime staff and are utilized by the adult evening instructors, many of whom are part-time instructors. Approximately 75 percent of the adult enrollees come to the Institute to upgrade their skills within an existing employment setting. Most of the other adults enrolled enter to be retrained, and many are mid-career women. The age range of adult students is from 17-60s, with most being in their 20s. As far as the sex stereotyping problem is

concerned, the school is experiencing more success than most Vo-Tech Institutions in getting women into traditionally "male" occupations than vice versa. 916 AVTI has the records highest minority race enrollment in the state Vo-Techs and the highest retention record.

There are four Directors of Instruction (Mr. Warner is one of them) who report to Chris Schlegel who serves as both Assistant to the Superintendent for Instruction and as Director of the Area Vocational Technical Institute. The four Directors of Instruction have a staff relationship with the Director of Adult Extension and Part-time training. Teachers in the program are hired based on their occupational experience, with supportive professional education training. All daytime programs in the school are on-going throughout the year without quarterly or semester breaks, while the adult evening program is organized into four quarters per year. Programs are monthly entry/open exit and the person whose name is at the top of a waiting list is allowed to enter as soon as another student completes or leaves the program. The school refuses no one from a program offering. Further information about this program is contained in the National Directory of Selected Competency-Based Adult Vocational Education Programs.

CURRICULUM AND INSTRUCTIONAL TRAINING MATERIALS

Curriculum development begins by developing a list of job tasks with the assistance of Advisory Committees in specific occupations. A "Learning Guide" is then prepared for each job task which is a series of directives to take the students through the learning process. The format of the Learning Guide is standardized and is in use throughout the Institute. Learning Guides have a statement of the task and its purpose printed on the cover along with department, program, task, and prerequisite codes. Inside the Learning Guide is a space for student data, the terminal performance objective is stated, micro-performance objectives are listed next, followed by an agreement whereby the student and instructor sign a statement indicating the performance and time agreement reached between the two. This agreement becomes the basis for reporting the student's competency and for recording progress. The next page of a Learning Guide contains a statement of the first micro-performance objective and provides the student with learning steps and resources necessary to accomplish that objective. Information sheets are provided for each micro-performance objective listing such items as tools, equipment, materials, and explaining such things as procedures and techniques necessary for the performance. The last page of the Learning Guide contains a Performance/Product Checklist on which the Instructor evaluates the quality of the student's performance. Instructions are provided in the Learning Guide for students to contact the instructor when they feel competent to have their performance evaluated.

Thus the Learning Guide is a short, concise document which lists all the steps necessary to complete an objective and specifies the necessary resources such as information sheets, sound-slide sets, videotapes, texts, etc. Each department in the school has its own Learning Resource

Center where students may easily obtain the resources specified in the Learning Guide. Criterion tests are used as part of the learning steps and are not used just as a "final" test of competence. The "Performance/Product Checklist" contains multiple criteria for evaluating the psychomotor skills of a terminal performance objective. The "product" is the performance which is to be done. No resources may be used with the checklist unless the same resources are used as a part of the normal job performance.

STAFF TRAINING IN CBE

The Institute uses a teacher training program developed in-house for instructors in both the day and adult evening programs. The teacher training program is also competency-based in a similar format to other CBE curriculum materials in the Institute. The teacher training program consists of seven units or modules which include:

1) Working at 916 Vo-Tech Institute
2) Becoming an Instructor
3) Using the Personalized System of Instruction
4) Designing Self-Paced Curricula for the Personalized System
5) Selecting and Designing Resources
6) Developing Evaluation Instruments
7) Revising the Curriculum

This competency-based teacher training program is self-instructional for the most part. Although the Institute has a half-time teacher trainer on the staff (it is anticipated that this will be a full-time position by fall, 1977), the teacher trainer is not needed as much on the first three units. The teacher trainer's time is required to a considerable extent in the last four units. The teacher trainer does work with all units to some extent and the units (modules) are designed in that way. One of the major inputs to the design of the Institute's teacher training program was the performance-based teacher education modules developed by The Center for Vocational Education, Ohio State University. Teachers are trained to focus on the "end product" (student performance) to better meet industry needs.

STRENGTHS

A major strength, referred to earlier, is that no student is refused entry into programs at the Institute; the CBE programs are highly individualized and are monthly entry/open exit. Other strengths pointed out were that the consistency and systematic approach are applied throughout the school by instructors and supervisory staff. Instructors can see tangible progress among students, and support services in the Institute are particularly strong with instructional design, media, materials production, and assistance with individual students' problems.

LIMITATIONS

At present the adult part-time and extension vocational program does not utilize a systematic placement and follow-up program for those who complete or leave as is provided for full time postsecondary students. However, such a program is being planned, consistent with the requirements of the Education Amendments of 1976. Another limitation in the adult vocational program is that shorter modules are needed in some courses. Unlike the daytime program, the adult evening program is structured into a fixed time frame, generally in nine-week quarterly blocks. This quarterly blocking approach is primarily utilized in order to facilitate the short-term employment of part-time evening instructors from local businesses and industry. However, the monthly entry/open exit concept is applied at the performance objective (or task) level, allowing for a high degree of individualization within the course.

GENERAL COMMENTS

See a text co-authored by Dr. Knaak: David J. Pucel and William C. Knaak. Individualizing Vocational-Technical Instruction. Columbus, Ohio: Charles Merrill, 1975.

CBAVE SITE VISIT

CONTACT: Dr. John Kobe, Adult Vocational Director
Suburban Hennepin County Area Vo-Tec Centers
District Office
1820 North Xenium Lane
Minneapolis, MN 55441
Ph: (612) 559-3535

Dr. Richard Emery, Superintendent

SCHOOL DESCRIPTION

Suburban Hennepin County Area Vocational-Technical Centers, Independent District No. 287, consists of a north campus, a south campus, and a district office which is centrally located between the two campuses. The school serves a large metropolitan area west of Minneapolis. The school covers 13 suburban school districts and 24 high schools. Most of these high schools provide vocational programs as well. Independent District No. 287 covers the largest geographic area among the 34 vocational-technical centers in Minnesota. This school district is the second wealthiest in the United States. When the school began operation in 1970, the adult evening program was the first to become operational. In addition to vocational-technical programs, the school does all the special education for each of the 13 school districts covered by the Suburban Hennepin County Vocational-Technical Centers.

DETAILED PROGRAM DESCRIPTION (Adult Vocational Education)

The adult vocational program is non-credit and non-degree and is operated separately from the secondary and post secondary programs which are conducted during the day. The adult program operates from 6-10:30 p.m. on a quarterly basis year-round. In the preceding four quarters (1976-77) the adult vocational program employed 650 instructors on a part-time basis and enrolled 22,000 adult students. The school operates "tailor-made" training programs for area businesses and industries, and these programs comprise 40-45 percent of the student enrollment. Grades are not employed in the program, but diplomas are awarded upon program completion which certify the competencies achieved in the course taken. Advisory Committees review each program four times a year. Advisory Committees are heavily involved in programs and the school purchases no equipment without Advisory Committee endorsement. Dr. Richard Emery, Superintendent of Independent District No. 287, started the competency-based concept when the school opened, and he led this movement with the full support of the School Board. Dr. Kobe was the District's fourth employee hired. Dr. Emery, Dr. Kobe, and others traveled throughout the United States and part of Canada examining learning activity packages. Subsequently, the school administration developed a structure for learning

activity packages, called "PAKS," throughout all programs in the school system. Since many of the adult vocational teachers are part-time instructors from local businesses and industries, heavy use is made of the competency-based curriculum materials developed for use within the regular day program. Due to administrative leadership and management procedures, the format for specifying performance objectives, developing PAKS, and supporting learning materials is consistent across all programs and courses throughout the school system. There is a strong administrative commitment to CBE in the school.

CURRICULUM AND INSTRUCTIONAL TRAINING MATERIALS

All full-time teachers in the regular day program of the school work an eight-hour day. When teachers are not in class, they have responsibility for writing new or revising existing curriculum materials in the prescribed CBE format. This has been a continuous development process for the past five years. A large volume of materials has been developed over this period and they are used routinely in the adult vocational program. Instructors themselves are primarily responsible for developing PAKS. Although the type of learning resources varies from course to course depending upon its content and the availability of support materials. Resources include textbooks, videotapes, slide-tape sets, audio tapes, information sheets, and worksheets. A large number of classes utilize videotape cassettes. The school is increasing its use of sound-on-slide sets because of their great flexibility and ease of revision. Program Advisory Committees and content specialists on the staff regularly review and suggest revisions as a means to quality control of instructional materials, Further information about this program is contained in the National Directory of Selected Competency Based Adult Vocational Education Programs.

STAFF TRAINING IN CBE

Adult vocational teachers who use the competency-based learning PAKS in their evening courses are required to take a pre-service training unit which is based upon a PAKS "training package." In this way, teachers are trained by a procedure which they are expected to employ in their classrooms. This pre-service training is a requirement for state certification and is also necessary for incremental advance on the teacher salary schedule. In addition, there are four in-service teacher training sessions which are offered for three hours, one night per week, for four weeks (or a total of 12 hours), and these sessions are conducted successively so that a teacher may enroll in all of them.

The pre-service teacher training unit lasts for 30 hours and includes teaching methods and orientation to the school's competency-based education delivery system. The four 12-hour sessions of in-service teacher training include (1) job and task analysis, (2) individualizing instruction based on task analysis, (3) effective use of learning hardware including the various types of audio-visual equipment, and

(4) student evaluation and the psychology of adult learning. Dr. Kobe recently completed his Ph.D. dissertation at the University of Minnesota on the subject of competencies needed by adult vocational instructors.

STRENGTHS

Dr. Kobe gives major credit to the school's progress in competency-based education to its Superintendent, Dr. Richard Emery. There is a strong institutional commitment to CBE. All professional staff of the school are expected to perform in the CBE framework. More specifically, strengths include:

(1) The program lends itself well to training for specific industry needs. Competency lists already available at the school make a good starting point in discussing curriculum content needs with industry personnel.

(2) The program can be adjusted easily to the base differences in the adult population served. Competency-based education and individualized instruction go hand-in-hand in the school.

(3) The program is compatible with the problems of the adult learner. For example, if an adult must miss class due to babysitting problems, or any other reason, a person does not "fall behind" in the course, but rather continues to work on the competency being pursued prior to an absence.

LIMITATIONS

The placement program for program completers is quite limited, primarily because most adults enrolled in the evening program are already employed. People who are unemployed and who complete a vocational course have primary responsibility for obtaining their own jobs. Also, no formal follow-up program of adults who complete or leave adult vocational courses is in operation. Occasionally, informal reports are received from former students or their employers.

GENERAL COMMENTS

This program is one of the most comprehensive, highly developed, and well managed in the United States. There are a large number of adult vocational courses which are operating at present under a standardized competency-based education delivery system. The administrative commitment to make a program of this size work so well is unusual by the present state of the art in CBE.

CBAVE SITE VISIT

CONTACT: Ms. Rosemary Sanderson, Program Director
St. Vincent Practical Nurse Program
Northern New Mexico Community College
c/o College of Santa Fe
Santa Fe, NM 87501
PH: (505) 982-6524

SCHOOL DESCRIPTION

Northern New Mexico Community College was so named, effective July 1, 1977. Prior to that time the school was named New Mexico Technical Vocational School. The school is located on the campus of the College of Santa Fe, although the administration of Northern New Mexico Community College is completely separate from that of the College of Santa Fe, and buildings occupied by the Community College are rented from the College of Santa Fe. The Community College offers 15 vocational programs leading to one-year certificates. Examples of these programs include typing, shorthand, meat cutting, distributive education, carpentry, auto mechanics, auto body repair, appliance repair, dental assistant, and the practical nurse program. In addition, the Community College offers a two-year program leading to an associate degree in liberal arts. Approximately 500 students are enrolled in all programs of the Community College. Students come from throughout northern New Mexico and they are predominantly tri-cultural: Anglo, Spanish-American, and Native American.

DETAILED PROGRAM DESCRIPTION (PRACTICAL NURSING)

The practical nursing program was originally hospital-based, beginning in 1949. The program has been located on the campus of Northern New Mexico Community College since spring, 1974. Rosemary Sanderson initiated the competency-based education emphasis as a result of a CBE workshop conducted in summer, 1974, sponsored by the New Mexico State Department of Education. The St. Vincent School of Practical Nursing in its present competency-based format has been in existence since summer, 1974. At that time the competency-based practical nursing program was built heavily upon a study conducted by Lucile A. Wood, "UCLA Allied Health Professions Project--Nursing Occupational Report." This report was used to identify nursing tasks which became the basis of performance objectives for the program. Later a project funded by the W. K. Kellogg Foundation at the University of Albuquerque entitled "New Mexico SNAP Project: Systems for a Nursing Articulation Program," established minimum behavioral expectations which beginning practitioners are expected to perform in several categories of nursing competencies. The purpose of this three-year project is to design,

implement, and evaluate a state-wide articulated system of nursing education, and one goal of the SNAP project is to have all nursing education programs in New Mexico offered in a competency-based format.

Students in the St. Vincent School of Practical Nursing range from 18-55 years of age, with most in their late 20s. Approximately 35 students are enrolled in the program each year, and they come from the Work Incentive (WIN) program, CETA, and Veterans Administration programs. Spanish-Americans make up approximately one-third of the students in the program, often there are 2-3 American Indian students, and the remainder are Caucasian. Further information about this practical nursing program is contained in the National Directory of Selected Competency-Based Adult Vocational Education Programs.

CURRICULUM AND INSTRUCTIONAL MATERIALS

From the beginning of the competency-based program in 1974 until early 1977, the primary curriculum materials in use were modules developed from the study by Wood at UCLA, cited above. Beginning in fall, 1977, a change is being made to commercially produced curriculum materials published in the document, Modules for Basic Nursing Skills, by Eilis, Nowlis, and Bentz (Boston: Houghton Mifflin Co., 1977). (Note to the reader: It was noteworthy that this program in practical nursing is the only one among the site visits conducted in this USOE project in which commercially-produced curriculum and instructional materials are in predominant use. All other sites visited relied very heavily on materials developed by instructors locally, sometimes supplemented by commercial materials.) In addition to the published modules in current use and the modules previously used as well, many filmstrips, slides, films, and other audio-visuals are used to supplement the curriculum modules.

STAFF TRAINING IN CBE

In 1974 Lucile Wood conducted a CBE workshop in the "Career Mobility Project" sponsored by the New Mexico State Department of Education. This workshop, based largely on the work of Robert Mager, was a major impetus to Ms. Sanderson in initiating her competency-based nursing program. Subsequently, the SNAP project conducted several workshops for nursing education personnel in New Mexico. These workshops dealt largely with the formulation of behavioral objectives, development of related learning activities, design of mastery assignments, and competency-based course management. To supplement these workshops, the Health Occupations Education Coordinator in the State Department of Education worked with several staff members at the school in implementing the CBE concept. In addition, during the spring of 1977, the State Department of Education conducted a workshop on development of performance objectives and associated curriculum development activities.

The CBE concept was chosen for this practical nursing program for several reasons. First, the New Mexico Career Mobility program has called for certification of competency at each of the nursing career levels. This effort is part of a move toward establishing upward mobility to the associate degree level with minimal repetition and loss of time for the student. Second, the CBE concept "made a lot of sense" to Ms Sanderson, and her leadership appears to have been critical to the development of this particular program. Third, leadership personnel of the New Mexico State Department of Education in general have been encouraging the use of measurable performance objectives throughout all vocational programs in the state.

STRENGTHS

Curriculum modules used in the program allow students to work at their own pace, within a framework of reasonable limits. Students have three opportunities to achieve mastery in a given competency, based upon the mastery testing activities. Another strong and very unique feature of this program are the follow-up activities conducted among former students and employers. The student follow-up program has been conducted since the program began in 1949, and is conducted among students who have been out of the program for one and five-year periods. (Approximately 450 of the program graduates are now working in New Mexico and about 200 are employed in California.) An employer follow-up is conducted in instances where former students give their consent for this to be done as they complete their one and five-year follow-up forms. (Note to the reader: Also, this is the only program among those site visits conducted which has a systematic, data-based follow-up program for both former students and employers.) There is no formal placement program, however; students are responsible for getting their own jobs after graduation.

LIMITATIONS

The major limitation pointed out is that clinical performance tests are needed to assess former students' competence in hospitals upon course completion. If such tests were available, this would be an important input into course evaluation and subsequent curriculum revision.

REFERENCES

Burger, L. J., & Lambrecht, J. J. *Handbook for vocational instructors interested in competency-based education.* Minneapolis, MN: Research Coordinating Unit, 1974. (ERIC Document Reproduction Service No. ED 118-979).

Hertling, J. E. Competency-based education: Is it applicable to adult education programs? *Adult Leadership,* June 1974, *23*(2), 50-52.

Houston, W. R. Designing competency-based instructional systems. *The Journal of Teacher Education,* Fall 1973, *24*(3), 200-204.

Knaak, W. C. Administration, development, and operation of a competency-based adult vocational education program. In E. B. Russell, C. K. Anderson, and J. Boulmetis (Eds.). *Proceedings of the National Workshop on Competency-Based Adult Vocational Instruction, August 2-5, 1977.* Columbus: The Center for Vocational Education, Ohio State University, 1977.

Pucel, D. J., & Knaak, W. C. *Individualizing vocational-technical instruction.* Columbus, OH: Charles Merrill, 1975.

Spady, W., & Mitchell, D. E. Competency based education: Organizational issues and implications. *Educational Researcher,* February 1977, *6*(2), 9-15.